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THE UNIVERSITY OF ALBERTA

ATTITUDES OF PRINCIPALS, COUNSELORS, STUDENTS AND TEACHERS TOWARD THE SECONDARY HOME ECONOMICS PROGRAM

by

JOYCE A. PLICAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Attitudes of Principals, Counselors, Teachers and Students Toward the Secondary Home Economics Program

submitted by Joyce A. Plican

in partial fulfilment of the requirements for the degree of Master of Education

Edith Dawn
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Date October 1, 1975.

ABSTRACT

A revised home economics curriculum introduced in 1972 into Alberta schools was meant to meet the social, psychological, intellectual, and creative needs of students. This was seen by members of the home economics profession as being of benefit for enriching the individual and family life of students. The purpose of this study was to determine and compare attitudes of principals, counselors, teachers, and students toward the senior high school home economics program.

A modified Likert questionnaire was constructed, pretested, piloted, and revised before it was implemented in the actual study. Principals, counselors, and home economics teachers in Edmonton Public and Separate schools were sent a mail questionnaire while students chosen by random cluster sampling were administered the questionnaire in class groups.

The sample consisted of 162 students, 16 (76.2 per cent) principals, 37 (75.6 per cent) counselors, and 34 (69.4 per cent) teachers. Data obtained were submitted for computer analyses.

There was a significant difference in attitudes toward clothing and textiles, food science, and modern living between students and teachers and counselors and teachers. There was no significant difference between principals and teachers. Students had the lowest mean for each subtest, counselors the second lowest, and home economics teachers the highest.

There was a significant difference in attitudes toward each of the subtests between male and female students with females having the higher mean. There was also a significant difference between those who had some experience with a home economics course and those who had none. The latter exhibited a lower attitude.

Modern living received the lowest rating for all groups with clothing and textiles next and food science highest. Negative beliefs for each of the groups in all three areas were identified.

Respondents indicated a lack of sufficient information to form an opinion mainly in modern living and clothing and textiles. Subject area content and quality of the course had the greatest proportion of non-response in all three areas. Students and counselors indicated the greatest deficiencies of facts.

On the basis of this research, it was recommended that professionals in all areas of home economics set up a program by which counselors and students can become more knowledgeable about the home economics program at the senior high school level.

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CHAPTER I

THE PROBLEM

Introduction

Attitudes are important in determining a person's perceptions and acceptance or rejection of a particular attitude-object. The present study describes research aimed at discovering the attitudes of principals, counselors, home economics teachers, and students toward home economics programs in Alberta senior high schools. A modified Likert scale was developed based on beliefs about clothing and textiles, food science, and modern living, and inter-group comparisons performed for each.

The present chapter briefly describes the historical development of home economics in America and issues, past and present, which concern the discipline. This leads into the statement of the problem, objectives of the study, and questions to be answered by this research. Finally, delimitations and limitations of the study are given.

Development of Home Economics

Since the 1800's, home economics has developed from a few "housewifery" courses to a recognized profession contributing to the development of the individual within the framework of the family and society. Home economics has evolved into a complicated discipline concerned with technical, economic, social, and psychological aspects in improving family and world conditions.

Previous to 1899, home economics, usually called domestic art or domestic science, consisted mainly of cookery and stitchery for girls (Williamson and Lyle, 1961). In 1899, the First Lake Placid Conference on Home Economics formally established it as a discipline concerned with improving conditions for the family (Richards, 1908). At this point, the subject matter was mainly the application of science to household tasks. Concern was expressed about the fact that while science had made great strides in industry, very little had been done to improve conditions in the home or what little had been done had been rejected by the naive homemaker. Richards refers to this when stating, "The present degeneration of home ideals is accompanied by thriftlessness, selfishness, and irresponsibility as well as inefficiency in daily living and failure to utilize the more favorable of the new conditions" (p. 23). The aim of the Lake Placid Conference was to improve home life through teaching. Although the focus had been mainly upon the woman in the home, even at this early date, it was stressed that both boys and girls should receive this education.

Over the years the field of home economics has grown steadily in importance and has changed its image. Williamson and Lyle (1961) have traced the stages of its progress. At first, it was seen as a collection of closely related subjects, which patterned itself into a way of living rather than into a job or profession. In time, a considerable accumulation of knowledge was acquired and home economics gained a place in the academic world by becoming an education subject aimed at preparing the girl for her future role as a homemaker. For many years, girls were the main beneficiaries of home economics education. It was not until 1941 that public school administrators began to consider the subject useful for all family members.

As changes occurred in science, technology, and society, home economics reflected the same progression by a continual increase and growth of content. As the role of the American woman changed in the twentieth century, educators began to realize that preparation for the familial roles of both men and women was far from adequate (McGrath and Johnson, 1968). This and a faith in education for solving individual and social problems gave impetus to the growth of the subject in the schools. Home economics is seen by those in the field as meeting particular needs of individuals and families in the society of which they are a part (Laroque, 1963). Because society changes, needs change. Since home economics is related to specific aspects of societal needs, it has had to meet certain challenges. Byrd (1970) lists some of the predictions which will bring about further changes in home economics:

1. a doubling of world population
2. increased physical and mental stress
3. increased environmental pollution
4. increasing gross national product
5. a move to ocean farming and the use of synthetic proteins

6. increasing social problems
7. a pro-family shift
8. added momentum to the knowledge explosion
9. shortened work time
10. increasing unemployment for the unskilled
11. scarcity of natural resources
12. prolongation of life

In addition to the awareness of the evolution in societal and family life, Simpson (1960) maintains that educators must consider the constants for planning content to be incorporated in the home economics curriculum, i. e.

1. a belief in the importance of family life
2. the preparation of children in establishing their own homes
3. the basic human needs
4. man's need for creative expression
5. the home as collector and synthesizer
6. the right to live together in human dignity
7. democracy as a value.

The present home economics curriculum for Alberta incorporates both the constants and the changes. A problem exists, however, in that people not directly involved with the field may not be aware of contemporary developments in home economics theory and practice.

Defining Home Economics

Because of the advances in the scientific and social field, by the fifties and sixties, home economics has faced a need for revision and clarification in its definition and its objectives. The American Home Economics Association, in 1959, redefined the subject as

> The field of knowledge and service primarily concerned with strengthening family life through
> - educating the individual for family living
> - improving the services and goods used by families
> - conducting research to discover the changing needs of individuals and families and the means of satisfying these needs
> - furthering community, national, and world conditions favorable to family living
>
> (Committee on Philosophy and Objectives of Home Economics, 1959)

Definitions offered by other writers generally agree with the one given by the Committee. Creekmore (1968), in emphasizing the shift from manipulation of material things to well being of the family defines home economics as "the study of man as a total being, his near environment, and the interaction between them" (p. 95). Byrd (1973) feels that although this concept is correct, it is too broad for interpretation for education and offers the following definition: "Home economics is the study of human and material forces affecting homes and families and the utilization of this knowledge for the benefit of mankind" (p. 414).

This study utilizes the definition given in Concepts and Generalizations (1967) which was used as the basis for the 1972 Alberta Home Economics Curriculum Guide. Home economics for this research is defined as the discipline concerned with child development, health, clothing, consumer education, family relations, food and nutrition, home furnishings and equipment, and management of resources with the over-all goal of strengthening family life.

Background to the Problem

Because of financing and educational priorities, various aspects of education have come under close scrutiny and will continue to do so. Whether or not various groups perceive home economics valuable enough to merit funding and to receive a high or low status within the school program will depend to a great extent on the attitudes toward the subject.

As a field of study, home economics draws knowledge from the physical, biological, and social sciences, and the arts, as well as from its own research for improving the lives of families and individuals (New Directions, 1959). The image of home economics which has evolved to date offers little satisfaction to members of the profession (Vossbrink, 1966). With the advent of the space age and the demand for scientific excellence, education began to be charged with hindering progress and not accomplishing its goals. A result was the desire for elimination of "frill" subjects. Home economics became classified as one of the "frills" and given credit for undermining educational standards. Vossbrink goes on to say that little thought was given to contributions in the areas of nutrition, sanitation, and child care in improving world conditions and the subject was considered unimportant.

Home economics being a comparatively new discipline, the general public is relatively unfamiliar with it and traditional educators tend to view it with some suspicion. Nieman (1973) claims that people outside the profession have little knowledge about home economics and tend to care even less. If this is the case, that is, if the program is held in low esteem because of a lack of knowledge or false beliefs, then this would suggest a negative attitude toward it.

As seen in the more current definitions of the subject there is an even greater emphasis on the family and on interaction than in the past. When so many of the traditional societal values are being questioned, the one that is not is the goal of attaining a satisfactory style of living (Nieman, 1973). The general objectives of secondary education reinforce this view. The goals of basic education as given in the Junior-Senior High School Handbook for 1975-76 focus on personal developemnt, citizenship, and career preparation.

The goals of home economics education in Alberta secondary schools are

1. To appreciate the significance of the family as a unit in society and the impact it makes upon health, values, and attitudes of members at each developmental stage.
2. To understand the nature of personal values and their role in determining the quality of family life and personal relations in society.
3. To perceive the family practices of different cultural groups and to gain some skill in deducing general underlying principles relevant to meeting human needs.
4. To comprehend the influences affecting decision making and to develop skill in decision making and managing of family resources.
5. To improve understanding of research methods and ability to apply the result to the solution of specific problems in the home,
6. To acquire knowledge and skills needed to provide food,

clothing, and shelter for the family and to develop human relations skills.

7. To develop intellectual abilities and attitudes needed to deal creatively with continuous social, economic, and technological changes affecting family life.
8. To become familiar with the range of further educational opportunities available to them in Home Economics or related fields and to prepare for university, vocational entrance or a career.

(A Handbook to Accompany the New Home Economics Curriculum, 1972).

Like the objectives of secondary education, home economics shares with other fields the responsibility for developing perceptive, well-informed citizens with the competence and desire to further conditions for a satisfying mode of life.

A number of issues challenging the subject affect individuals' perceptions and attitudes toward it and may have implications for its implementation and functioning in the school setting. These issues have faced home economics since its beginnings and still remain unresolved. The way in which an individual felt about each issue was a way of guaging an opinion or belief inferring an attitude toward the program at the senior high school level.

One of the important issues affecting the future of home economics is professionalism (Marshall, 1973). If the ultimate goals of home economics are to be realized, more professional people are needed for teaching rather than "housewives who can do it right" (East, 1975). East feels that the profession has been hampered by housewives who work in the field of home economics but consider this work secondary to the maintenance of their own home. If home economics is to enjoy the same degree of prestige as other school subjects, the professional home economist must be able to impress upon others the importance of the work being done. To develop a favorable attitude toward the subject in others requires the teacher to be completely dedicated to the discipline. If the credibility of the communicator, i.e. the teacher, can be questioned, then the field that the communicator represents may also be challenged with respect to its value (Kretch, et al, 1962).

Another issue facing home economics is the sex-role definition (Marshall, 1973). Even though it was stressed from the beginning that this education should be available for both boys and girls (Lake Placid Conference, 1908), home economics had remained mainly a "girl's course". Today, there is increased feeling that boys should also become involved (Laroque, 1963; Nieman, 1973; East, 1975). Schubert and Dalrymple (1959), in a study conducted with young homemakers in the United States, found that in most homes surveyed the husband shared family responsibilities. As one boy stated in relation to the family role, "You don't sort out the jobs into his and hers anymore. Marriage is a partnership, isn't it?" (Travers, 1973, p. 51). The same article states that boys were found to express a need for home economics because they were looking forward to being on their own as well as sharing responsibilities when married.

Fleck (1972), who has written numerous texts and articles on home economics, feels strongly about including boys in home economics programs. Although she does not indicate from where she has drawn her conclusions, she says that boys have taken courses in every subject matter area in home economics and have varied interests in the field. She suggests that educators should not minimize this interest in areas which have traditionally been classified as feminine. In Alberta, in the late sixties and early seventies, there have been more boys enrolling in home economics courses than in the past but the female population greatly outnumbered the male population (McFarlane, 1965-1973).

Still another problem concerning home economics is the general type of education that the program offers. In a very limited study in Britain, Travers (1973) found that academic students were usually not enrolled in home economics programs. Because of the particular schools' emphases upon vocational preparation, home economics was considered an appropriate subject for those less academically inclined. In a study with Michigan schools, Vossbrink (1966) found that there may have been some confusion as to the status of home economics with counselors recommending more "solid or academic" subjects to college-bound students or recommending home economics only to those who plan to major in the subject. Nieman (1973), in discussing the value of home economics for the total education of children, states that it is too important to become the "dumping ground" for the low student.

Home economics offers programs which can be adapted to all levels of students. It can prepare the career-oriented student with a background suitable for jobs related to the field, is useful as credit for university entrance, and also provides the student with knowledge conducive to a satisfactory personal and interpersonal life style (Handbook, 1972).

With a more diversified education being offered to students today, home economics is still viewed as being of minor importance (Laroque, 1963). It is this type of attitude which may be detrimental to the dissemination of accurate information concerning the program and which may be a disadvantage to prospective students who would profit from electing the program.

The Problem

The problem in this study is to determine the attitudes toward the home economics program held by principals, counselors, and students by identifying their beliefs about status, content, and practices of clothing and textiles, food science, and modern living at the senior high school level and to compare these with the attitudes of home economics teachers.

Need for the Study

Goedicke (1968) studied one senior high school situation in Red Deer, Alberta, in 1968 in which the social systems approach was used to study the home economics department within the composite high school setting. Data was collected by direct observation, questionnaires, and from school records. She found that over a period of 8 years from 1960 to 1968, enrolment in home economics did not increase proportionately with increasing school enrolment. By means of a questionnaire, thirty-six girls in Fabrics and Dress 10, 20, and 30 were asked why they took or intended to take more advanced clothing courses. Twenty-nine former fabrics students were asked why they chose not to take the more advanced course and fifteen students were asked why they did not take any fabric course. Twelve home economics teachers in randomly chosen schools were asked to state their opinion as to why they thought students elected or did not elect to take a fabrics and dress course. Statistical analysis was not applied to the data but comparison of responses showed a difference between teachers' opinions and students' actual reasons, especially why they decided not to take the course.

The same study indicated a distinct conflict of goals between those held by the administration and those held by the fabrics and dress teacher. According to Goedicke, the school gave priority to university preparation whereas Fabrics and Dress professed to offer preparation for life. Goedicke judged the school's goals to be more impersonalized and external while the Fabrics and Dress system's goals were judged as more personal. She also found that expansion of the Fabrics and Dress systems to more students was hampered by facilities and the administrators' goal to keep the Fabrics and Dress courses among other options.

Goedicke's study shows a difference in perceptions between teachers and students and teachers and administrators. These perceptions may be related to beliefs derived from the attitude toward home economics. Since administrators determine school policies with regard to facilities, financing, and course offerings, their attitudes toward home economics may determine its status within the school system. This study assessed principals' attitudes toward the high school home economics program and compared them with those of home economics teachers.

Students' perceptions may also affect their election or non-election of home economics. The above study indicated a difference in beliefs between teachers and students as to why students chose not to take the course. Another study conducted by Pisesky in 1970 revealed student-teacher differences regarding the perceived needs of grade eight students in the areas of foods, clothing, housing, management, and human development. Data obtained from 330 students, 447 parents, and 314 home economics teachers were used for comparison of the various groups. What students and parents perceived as student needs differed from what teachers thought to be the needs of the students. Although this study was not directly related to attitudes, the concept of needs is. Kretch, et al, (1962) maintain that a favorable attitude will be formed toward objects and people which satisfy an individual's wants or needs. If students do not view the home economics program as fulfilling their specific needs then their attitudes toward the subject may be unfavorable and this may affect choice of the subject in the school program. Statistics show a drastic drop in enrolment in home economics from junior high school to senior high school in Alberta in the late sixties and early seventies (McFarlane, 1965-1973). Home economics teachers tend to look upon their field as important, dynamic, and having something to offer all students. The present research aims at determining students' attitudes and comparing them with those of home economics teachers in order to discover important differences in feelings about the subject.

School counselors, as part of their educational responsibilities, spend time in advising students about course selection and time-tabling. Since they would have contact with a greater number of students than would the home economics teacher, their attitudes toward the home economics program might be important in presenting this program to students. Because of this, counselors were included in this study.

No other study concerning counselors and home economics in Alberta was found indicating a need in this area.

Many changes have occurred recently in Alberta's educational system. The reduction of credits that any one student may take in a given term in senior high school means that the student on a matriculation pattern may select fewer options. Also, with the introduction of the class B options in junior high school, home economics has to compete with these for student enrolment. A revised curriculum in home economics, introduced in 1972, means many students are unaware of the specifics of its courses and content unless a special effort is made to inform them of it. The attitudes as constituted by beliefs toward home economics also may have an effect on the election or non-election to take courses in this area. If a student has based an attitude toward the home economics program and acceptance or rejection of it on false beliefs, this student is at a disadvantage in evaluating the program.

In discussing factors that affect learning, Prescott states "... all children and youth are eager to learn the things that seem significant to them in the light of their accumulated interaction with the world and with society" (Prescott, 1958, p. 10). It would seem, then, that the beliefs and attitudes of parents, teachers, counselors, principals, and other students may affect the desire to learn in the student. Existing beliefs and attitudes toward the status, content, and practices of home economics are important in determining enrolments as well as the desire to learn within the subject.

Individuals can assess the home economics program accurately only if they possess accurate beliefs about it. The present study attempts to compare beliefs of principals, counselors, and students with those of home economics teachers concerning clothing and textiles, food science, and modern living at the senior high school level. Any negative beliefs ascertained will form the basis for structuring and communicating a more positive approach to the program.

Objectives of the Study

The objectives of this study are

1. To determine if principals, counselors, and students differ from home economics teachers in their attitudes toward the status, content, and practices of home economics at the senior high school level.
2. To determine if course experience in home economics or sex of students is related to differences in attitudes between such groups toward the clothing and textiles, food science, and modern living programs.
3. To determine what negative attitudes, as determined by negative beliefs specified by specialists in the field, may exist among principals, counselors, and students.
4. To recommend action for structuring a more positive approach to home economics as a subject in the secondary schools.

To achieve the objectives, a modified Likert scale was constructed. Subjects responded to belief statements choosing one of four points from strongly disagree to strongly agree (no undecided category) or choosing a fifth point indicating insufficient information to respond. Part 2 of the measure gave background information about the respondent.

Data were gathered by mail questionnaire from principals, counselors, and teachers and by group-administered questionnaires from students. Tests of significance were applied to inter- and intra-group differences to answer questions resulting from the objectives of the study.

Questions to be Answered

Questions to be answered in relation to the major objectives of the study are:

1. Is there a difference in stated beliefs concerning the home economics program between
   a. home economics teachers and students?
   b. home economics teachers and principals?
   c. home economics teachers and counselors?
2. Is there a difference in stated beliefs concerning the home economics program between students who have taken a course in home economics and those who have not?
3. Is there a difference in stated beliefs concerning the home economics program between male and female students?

Secondary but related questions are:

4. Is the attitude toward home economics courses of each group tested predominantly positive or negative?
5. What relationship exists between each of the subtests, clothing and textiles, food science, and modern living, with each other and for the test as a whole?

6. Is there a difference in the stated beliefs concerning the home economics program between
   a. students and principals?
   b. students and counselors?
7. What incongruent beliefs, ascertained by university home economics educators, exist concerning the programs of clothing and textiles, food science, and modern living in the high schools? In which group and with what average frequency?
8. Are there areas in home economics about which respondents are not knowledgeable? In which groups and with what average frequency?

Definition of Terms

Home economics - a discipline concerned with child development, health, clothing, consumer education, family relations, food and nutrition, home furnishings and equipment and management of resources with the over-all goal of strengthening family life (Concepts and Generalizations, 1967). Courses in Alberta consist of home economics in junior high school grades and clothing and textiles, food science, and modern living at the 10, 20, and 30 levels in senior high school.

Belief - the cognitive component of an attitude, concerning information about an object. A belief, whether congruent or incongruent as determined according to the curriculum, provides a source of knowledge to the individual upon which to base attitudes and action. Beliefs about the status, content, and practices of home economics form the basis for attitudes toward the program.

Attitude - "a relatively enduring system of evaluative, affective reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects" (Shaw and Wright, 1967). Thus, the system of beliefs about home economics forming the attitude will cause a subject to respond favorably or unfavorably toward the program.

Home economics teacher - a teacher who spends part or all of his/her time instructing in clothing and textiles, food science, or modern living 10, 20, and 30. Whenever the word "teacher" is used, it will refer to a teacher of home economics.

Counselor - a person who spends at least one-half of his/her school time acting in an advisory capacity to students.

Principal - for the purposes of this study, principal or principal-designate shall mean an individual who is responsible for making school-administrative decisions regarding home economics in his/her school.

Opinion - a verbal statement of belief or feeling which forms the basis for inferring an attitude.

Opinionnaire - a type of questionnaire designed to measure opinions.

Delimitations of the Study

The following factors form the delimitations of the study:

1. Samples were drawn from two school systems in the city of Edmonton. No attempt was made to assess attitudes of specified groups in other cities or in rural areas. Although other city systems may be similar in response to the Edmonton systems, care must be taken in expanding

the generalizations to rural areas where responses might be quite different from those obtained in this study.

2. Attitudes were determined only to senior high school home economics programs. Questions concerning junior high school home economics, vocational home economics, or home economics for special classes were not asked. Although these are sometimes included with the senior high school programs in the Edmonton systems, these, excluding the junior high school program, are more likely to be found in specialized schools and usually have a modified or completely separate course of studies from those drawn up in the 1972 home economics curriculum guide.

3. Only four groups were studied--students, principals, counselors, and home economics teachers. Parents, employers, and other school teachers might also hold attitudes important for decision-making in the field of home economics education. This study limited itself to groups in the school setting who would be most concerned with the subject and would have the most impact upon it.

Limitations

The researcher recognizes the following limitations of this study:

1. Attitudes were inferred from the statements of opinion on a Likert scale (a paper and pencil test). These responses were not related in any empirical fashion to actual behavior or to any other type of measure.

2. Beliefs were judged in relation to the home economics curriculum. Since teachers interpret and adapt the curriculum guide for their particular schools, there may be some difference between the curriculum guide and the actual practice of home economics in the schools. This

study did not distinguish beliefs about the curriculum guide from the actual practice of home economics in the particular schools sampled.

Overview

The present research aimed at assessing and comparing attitudes toward the home economics program at the senior high school level. Included in the study were principals, counselors, home economics teachers, and students.

The review of literature deals with attitudes, their definition and nature, their importance, and their measurement. This is followed by a review of research related to attitudes in home economics.

The design of the study includes the development of the Likert-type opinionnaire, results of the pilot study, selection of the sample, and data collection and tabulation.

Results of the statistical analyses applied to the data and answers to the eight questions posed earlier are then presented.

The study is subsequently summarized to include the findings, implications, and recommendations for further study.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Since the turn of the twentieth century, attitude theory and study have received much attention from both psychologists and sociologists as well as from interested prople in related fields. This chapter presents a selected review of literature concerning attitudes and their measurement and modification. The final part of the chapter includes research on attitudes in the field of home economics.

The Concept of Attitude

The concept of attitude is one of the most distinctive and indispensable concepts in social psychology (Allport, 1967). It is not the property of any one psychological school of thought and can be applied to either individuals or groups of individuals.

Various writers define attitude in different ways and obtaining a universal definition poses a problem. Most existing definitions, however, agree on a common characteristic which is that attitude includes a predisposition on the part of an individual which, along with situational and dispositional variables, allows the individual to react or behave in a certain way in a given situation (Shaw and Wright, 1967). In behavioral terms, an attitude is "an implicit, drive producing response considered socially significant in the individual's society" (Doob, 1967, p. 43). The focus expressed in this definition is behavior which is socially significant, a point distinguishing attitude from other behavioral concepts. Edwards (1957) offers a different definition--"the degree of positive or negative affect associated with some psychological object" (p. 2). The psychological object could be a symbol, phrase, slogan, person, institution, ideal, or idea. Remmers (1954) seems to agree with this definition when he defines attitude as an "affectively toned idea or group of ideas predisposing the organism to action with reference to specific attitude objects" (p. 3). Both theorists seem to place emphases upon the emotional component of attitudes.

Another aspect of the definition is endurance of the beliefs comprising an attitude. Rokeach (1968) states in his definition that attitudes are "relatively enduring" over time for a particular individual. Thurstone and Chave (1929) stress the element of change in attitude. Attitudes are learned predispositions (Fishbein, 1967 A) and because of the learning process, are subject to change. A definition incorporating the aspect of learning into attitude is given by Sherif (1967) when defining attitude as "the individual's set of categories for evaluating a stimulus domain, which he has established as he learns about that domain in interaction with other persons and which relate him to various subsets within the domain with varying degrees of positive or negative affect" (p. 115).

The definition accepted for this research is the one given by Shaw and Wright (1967): "a relatively enduring system of evaluative, affective reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects" (p. 3). This particular definition employed in the present study includes all of the following qualities:

1. Based on beliefs (refer to Ch. I for definition)
2. Affective
3. Evaluative
4. Aimed at a social object or objects
5. Involves learning
6. Contain reactions
7. Relatively enduring

These qualities may be considered to make up the nature of attitude, giving it a distinctive role in social psychology.

Nature of Attitudes

The qualities of attitudes presented in the previous section form the cognitive, affective, and behavioral components of attitudes. This section describes these multidimensional components in greater detail.

The cognitive component of an attitude may be described as the beliefs the individual holds about some object or issue (Kretch, et al., 1962). These beliefs may be factual or they may be evaluative and involve some amount of affect. Rokeach (1968) claims that the cognitive, affective, and behavioral components of attitude are also subcomponents of beliefs. Belief is defined as "any simple predisposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase "I believe that...' " (p. 113). All attitudes incorporate beliefs but not all beliefs may be part of an attitude. Beliefs somehow become organized into systems which have describable and measureable characteristics which, in turn, have observable consequences. Krathwohl (Handbook, 1972) presents a taxonomy for the affective domain by which an individual may be able to organize beliefs into an attitude system. The taxonomy is as follows:

1. Receiving - becoming aware of the attitude-object
2. Responding - reacting first by compliance, then with willingness and satisfaction
3. Valuing - accepting the value of the attitude-object
4. Organization - placing the attitude-object into a hierarchy of values
5. Characterization by a Value Complex - generalizing the attitude and acting consistently in relation to it

In discussing beliefs, Rokeach (1968) states three assumptions:

1. Not all beliefs are of equal importance to the individual.
2. The more central a belief, the more resistant it will be to change.
3. The more central (how strongly held) the belief changed, the more widespread will be effects in the rest of the belief system.

Beliefs, and therefore attitudes, are formed by the information and/or experiences to which an individual is exposed (Kretch, 1962). Beliefs may arise from direct experience with the object or indirectly through interactions with others who have been exposed to the object (Shaw and Wright, 1967). Not all beliefs correctly reflect the facts. Edwards (1957) uses the term "disbelief" to describe a belief which is not based on the existing beliefs. An individual forms beliefs by drawing facts from authorities, appearances, reality, creation, invention, or distortion (Kretch, 1962). Also, group affiliations affect belief and attitude formation. When an individual lacks his own reference system for the formation of beliefs and attitudes, the people of importance to him may be used as a reference when deciding to accept or reject a belief.

New information is frequently used to form attitudes consonant with pre-existing attitudes. Information which is adverse to existing beliefs may be rejected or distorted to fit the existing beliefs of the individual.

Fishbein (1967 A) classifies the different types of beliefs: beliefs about

1. the component parts of an object
2. the characteristics of an object
3. the relation of an object with other objects or concepts
4. the relation of the object to goals or valued states
5. what should be done with respect to the object
6. what the object should or should not be allowed to do.

Beliefs and belief systems make up attitudes. A number of related attitudes make up an attitude system and when the attitudes are organized into a hierarchical structure, this is said to form a value system (Katz, 1967). This structure forms a reference system for the individual for organizing, accepting, and rejecting new information and for guiding behavior.

The affective component of attitude involves some feeling, a pro or con view of the attitude-object. Thurstone (1967 A) states that attitude is the "sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic" (p. 77). Attitudes are related as well, to feelings of rightness and wrongness and to the liking or disliking of objects or values (Remmers, 1954). The cognituve and affective components of attitude make it a psychological phenomenon rather than an instinct (Allport, 1967).

The behavioral component of attitude is an aspect that is most difficult to explain and one which meets with disagreement from various writers. Doob (1967) considers an attitude in behavioral terms only. He describes an attitude as an "implicit, drive-producing response" but this is with the consideration of what is socially significant. Thurstone (1967 A, B) feels that neither the statement of opinion nor the behavioral manifestation form an infallible guide for the inference of attitude. Some studies show that an individual will modify an attitude to come in line with behavior rather than vice-versa (Fishbein, 1967 B). Rokeach (1968), however, claims that people cannot act against their attitudes and that when this appears to be the case, there must be a more important attitude overriding the original one. Behavior, also, is related to two types of attitudes--attitude toward the attitude-object and attitude toward the situation. The inference of attitude from behavior or the prediction of behavior from attitude, then, is not a simple matter. Extreme care must be taken when making assumptions about the two.

Attitudes are thought to be fairly enduring (Kretch, et al.,1962; Rokeach, 1968; Sherif, 1967). In contrast, however, Thurstone (1929), one of the first psychologists to attempt to measure attitudes extensively, stresses the element of change. In writing about measuring a person's attitude toward an issue, he states that such a measurement should not be interpreted as enduring or constant. Changes in attitude may be due to unknown causes or some persuasive factor and it is the responsibility of the researcher to measure and note changes in attitude. Some fluctuation may be due to errors in measurement but development of an appropriate scale should overcome this.

How enduring an attitude is depends on several factors relating to the attitude itself. The more closely the attitude is associated with the self-concept of the individual, the more enduring it will tend to be (Sherif and Sherif, 1967). In addition, endurance of an attitude may be related to personality, group affiliations, extremeness of the attitude, complexity, how consistent the attitude system is, the relationship to other attitudes, strength and number of wants served by the attitude, and centrality of the related values (Kretch, et al., 1962). These factors should be kept in mind when inferring how strongly an attitude is held.

The social aspect of attitudes is another consideration. Attitudes are learned and, therefore, subject to change (Sherif, et al., 1965). This learning occurs by direct contact with the attitude-object itself or indirectly by interaction with significant others. Because of the importance of different types of stimuli in the shaping and maintaining of attitudes, schools and communities have a tremendous responsibility in developing beliefs which are consistent with the aims and values of society (Remmers, 1954).

The opinionnaire for the present study is based on the cognitive (beliefs) and affective components of attitude. Beliefs about the senior high school home economics program were the basis for the opinionnaire. Each statement of belief either accepted or rejected by a respondent was taken to infer an attitude. Respondents chose from the alternatives of "strongly agree", "agree", "disagree", and "strongly disagree" indicating their feelings about the particular belief statements on the opinionnaire.

Principals, counselors, teachers, and students have contact with each other in the educational system and, therefore, may affect each other in relation to beliefs about particular school courses. For this reason, these groups were selected for testing in this research. Assessing and comparing the attitude of these groups toward the home economics program forms the basis for recommending changes which would improve the practice of home economics in Alberta senior high schools.

Importance of Attitude

Attitude systems are of great importance to the individual, his personality, and his behavior. Psychologists and sociologists have expressed much interest in the study of attitude to determine the relationship between attitude of individuals and groups of individuals and their behavior.

An attitude can be held toward anything that is socially significant for an individual (Kretch, _et al._, 1962). The most favorable attitudes will be held toward objects and people that most satisfy an individual's wants and needs. The attitudes form a system of reference to which an individual can relate to when a specific situation arises (LaPierre, 1967). An entire learning process at the time is not required because the individual may depend on past learning that is incorporated into the attitude.

Katz (1967) classifies four functions which an attitude can provide for the individual. The first is an adjustive function--the attitude allows the individual to make an affective association with the object or situation based on past experience in attaining satisfaction. When an attitude permits an individual to deny a reality presented to him (rationalization, projection, displacement), the ego-defensive function is put into effect. Attitudes that give positive expression to central values are performing the value-expressive function. Finally, attitudes provide a knowledge function, organizing facts and experiences into related systems for ready reference. These attitudes can then be used for interpreting much of what is perceived to be important.

Attitudes are important to educators because they affect what will or will not be accepted or learned by the student (Cronbach, 1963). Cronbach states that acquiring a belief is not simply intelligent, meaningful learning. He qualifies this by saying that even where an answer has been demonstrated as being superior, some individuals will cling to another answer. A person who possesses ability or skill may not use it. Emotions are often ~~tied~~ to these issues and the attitudes involved will affect the amount of learning taking place. An understanding of the underlying attitude and the formation, maintenance, or modification of attitudes will help the educator to further learning.

Identification of attitudes toward home economics may be of importance to educators at several levels. Teachers may focus upon weaknesses in the field in an attempt to improve practices at the senior high school level. Determining the attitudes of various groups toward home economics may also aid in curriculum planning and administration of home economics programs.

Measurement of Attitude

Attitude, itself, cannot be directly measured but must be inferred from other measures or from behavior since an individual may not be conscious of the type of attitude he possesses. Attitude may be inferred from behavior, words, or deeds. Stated verbal opinions form much of the data for attitude research (Sherif, et al., 1965). Kretch et al. (1962) maintain that overt actions and verbal statements of belief, feeling, and disposition to act with respect to the object are the indicators of an attitude.

Opinions are verbal expressions of attitude (Remmers, 1954; Hilgarde, 1963). Assessing verbal behavior, providing secrecy and anonymity are assured, is considered by some writers to be more reliable than observing behavior directly since actual behavior may disguise an attitude (Edwards, 1957). The measurement of an attitude, then, cannot be assumed to be a reliable predictor of behavior. If opinions and actions appear to be inconsistent, there may be some underlying reason or situational factor. This may occur when an attitude not being measured may interfere with or override the attitude being assessed (Rokeach, 1968). Thurstone (1929) states that even if an individual is intentionally distorting his attitude, at least the measurement indicates an attitude which the subject is trying to make people believe he holds.

According to Remmers (1954), in attempting to assess attitudes, the following assumptions are made:

1. Attitudes are measurable
2. Attitudes vary along a continuum
3. Measurable attitudes are common to a group
4. Attitudes are held by many people.

The present study accepts the above assumptions. The basic assumption is that attitudes can be measured and that the identification of attitudes of various groups toward home economics in senior high schools is of benefit in improving the program in practice, in curriculum planning, and in public relations concerning it. The continuum of the attitude toward home economics is from very favorable to very unfavorable and in this research is determined by the Likert scale. The researcher assumes that attitudes are held by many people and are common to a group when selecting the groups to be tested for research--principals, counselors, teachers, and students.

Limitations in the measurement of attitude are that attitudes may be temporary and changeable and may be subject to rationalization and deception. This limits, to some extent, the generalizations which can be drawn from the present research.

Thurstone and Likert developed the traditional scales for the measurement of attitude. Other scales have been developed by Guttman (scalogram analyses), Edwards and Kilpatrick, Coombs, Banta, and Lazarsfeld (Shaw and Wright, 1967). Choice of the type of scale used in a particular instance would depend on the attitude being measured and the preference of the researcher. Shaw and Wright also maintain that there have been few major advances in attitude measurement since Thurstone and Likert.

The Likert scale, known as the method of summated ratings, is a commonly used scale for attitude measurement. It is a non-disguised, structured test (Campbell, 1967). Statements of opinion or belief are collected to which subjects may respond along a continuum in a positive or negative manner. For example, one statement on the opinionnaire used in the present research is "Boys would find the modern living course of little use to them." Respondents mark "strongly disagree", "disagree", "agree", or "strongly agree" according to the amount of feeling they associate with what they believe to be true or untrue about the statement. The statements should be worded in a way that persons with varying attitudes will respond to it differentially (Likert, 1967). The reader is refered to chapter III, "Development of the Instrument" for a more detailed discussion about the acceptance of the Likert scale for use in this study.

Attitude Modification

As previously stated, attitudes are learned and are therefore subject to change. To modify an attitude, it would be desirable to understand the structure and formation of the attitude and actual beliefs and attitudes upheld by individuals and groups. Changing an underlying attitude may have longer lasting effects than the achievement of transient states of behavior (Zimbardo and Ebbeson, 1969).

When an individual comes into contact with an object for the first time, an attitude toward it will be formed on the basis of the information to which he is exposed (Kretch, et al., 1962). The beliefs formed from the input of the information are organized into a structure making up the attitude. Additional new information may be absorbed or rejected in relation to the previously established attitude structure. Acceptance of a new fact may also depend on the source of the fact, the situation under which it is communicated, and the predisposition of the individual toward the fact or situation.

When attitude change is desired, it may be brought about by the presentation of additional information, changes in group affiliations of the individual, enforced modification of behavior with respect to the object, and procedures which change personality (Kretch, et al., 1962). Where additional information is presented, here again, the situational factors and source, form, and content of the information may affect its degree of acceptance.

The more important an attitude is, the less susceptible an individual will likely be to change (Sherif and Sherif, 1967). They state, "the most significant attitudes are acquired with reference to one's fellow men with whom one has ties, claims for recognition, and for amounting to something as a person" (p. 135). Opinion is much more likely to be affected by interpersonal relations with other people than it will be by mere exposure to the media (Katz, 1957). Both Katz and Sherif stress the social aspect of attitude. Sherif, et al. (1965) maintain that it is easier to change a less committed attitude, especially to increase the amount of committment, than it is to change a highly committed attitude.

It is beyond the scope of this report to discuss exacting methods of inducing attitude change. The reader is referred to Kretch, et al., (1962), for a more complete coverage of the subject. The present study aims at identifying areas in which attitudes toward home economics can be improved and with which particular groups attitude improvement might be most effective for the most advantageous implementation of the program.

Attitudes Related to Home Economics

Simpson, et al. (1963) conducted a research study of vocational home economics programs in Kentucky, specifically relating such factors as quality of the home economics program, pressure to take other subjects, school schedules, attitude toward home economics, course offerings, and junior high homemaking programs to enrolment in high school home economics. A questionnaire with items relating to the above factors was administered to 130 senior high school girls, 52 principals, and 69 teachers. Schools with 25per cent increasing or decreasing enrolments in home economics were chosen, so the sample was not random.

Simpson's general conclusions indicate that students, home economics teachers, and principals differ in the pressures which they think affect enrolments in home economics. According to the students, they themselves were most influential in making the decision to enrol or to not enrol in home economics and the least influential person was the school counselor. The principals, on the other hand, thought the home economics teacher most influential. In general, Simpson, et al. found a positive attitude toward home economics in all three groups studied. An exception was a slight indication in schools which were experiencing decreasing home economics enrolment for students to consider the course a "snap" subject. The main drawback to enrolments was too little time in the schedule of the student bound for college or work.

Hawkins (1967) also concerned herself with enrolment in home economics in a senior high school in North Carolina because of the drop in enrolment in the program from junior to senior high school. Girls in grade ten and eleven at Page High School at Greensboro were administered a Likert-type questionnaire to determine factors influencing election or non-election of home economics. It was found that a majority of the girls (88 per cent of the grade tens; 80 per cent of the grade elevens) had taken junior high home economics but did not enrol in senior high home economics. Most college-bound students did not take home economics. Home economics teachers and school counselors were perceived as the most influential of the school personnel in helping students to make decisions. Their influence, however, was limited (10.9 per cent and 10.4 per cent for teacher and counselor influence, respectively).

The study conducted by Hawkins was limited by two factors--it was conducted in one school only and it sampled only girls.

A study examining the attitudes of adolescent girls and their mothers toward home economics was conducted by Walters (1968). A random sample of 66 girls enrolled in home economics, 18 girls who had taken no home economics, and 30 girls who had elected only one semester in grade eight was chosen from two senior high schools in Adams County, Colorado. Likert questionnaires consisting of 24 items were administered to the girls and their mothers. The results indicated that girls enrolled in home economics and their mothers had a more favorable attitude than girls who were not enrolled in home economics and their mothers. Although the attitudes of the girls and their mothers were fairly similar, the mothers of girls enrolled in home economics had a slightly lower attitude than the girls themselves while the mothers of the girls not enrolled in home economics showed a slightly more favorable attitude to the subject than their daughters. One of the recommendations drawn by Walters from this research is that home economics teachers and counselors need to communicate the purposes of home economics to the students, parents, and community.

Sheedy (1968) studied factors affecting the choice of home economics in the course of studies of girls at Sacred Heart High School in Pittsburgh where she was head of the home economics department. One hundred and forty students were involved in the study, but home economics was available to only seventy-five per cent of the students because of the type of program they were in. Only 51% of the female population were actually enrolled in home economics. Girls were classified into five types of programs for comparison of responses to an open-ended questionnaire--languages, science, general (all academic), secretarial, and clerical.

All but two girls felt that home economics should be offered in high school. The girls in the language and science programs, however, were unable to elect home economics because of the type of program in which they were enrolled. School records provided I. Q. and class ranks and results showed that the higher the I. Q. and class rank and the more academic the program, the less likely a girl was to select home economics. College-bound students did not usually select home economics; they felt other courses were generally more valuable for college entrance. Also, as the education of parents increased, a girl was less likely to be enrolled in home economics. Girls planning to go to technical school or headed for employment usually enrolled in the course. Still, indications were that those who did not register in home economics did so out of lack of interest in the course and those who did register did so because of liking for the subject. Perceptions of the course content were more accurate of those in the course rather than those not enrolled who saw the course as teaching only cooking and sewing.

A comparison of attitudes and interests between senior girls who were and were not enrolled in home economics at San Clemente High School in California was conducted by Kopenhefer (1965). Data were collected from student record forms, autobiographies, interest inventories, attendance records, and various projective techniques. Three senior English classes (non-home economics) and girls registered in home economics were involved in the study. The general education and economic status of the girls' parents were above average. Important findings were:

1. Students who had not taken home economics lacked knowledge of the subject.
2. Thirty-four per cent of those who had taken home economics felt the need for more training.
3. Thirty-two per cent of *all* girls surveyed had no intention of seeking more advanced education.
4. Emphasis upon an academic program eliminated home economics as a course of study.

Kopenhefer makes a number of recommendations as a result of this study. These are:

1. The home economics program should be re-evaluated periodically to meet the changing needs of students.
2. High school and college entrance requirements should be evaluated to determine ways in which scheduling difficulties may be overcome to allow interested students to take home economics.
3. There should be smaller home economics classes for better adaptation of course material to student needs.
4. All students and teachers should have the opportunity of

understanding the benefits the home economics courses offer students and the community.

5. There should be more community involvement in the home economics program.

In summary, Kopenhefer states that "Perhaps if the school thought of its program in terms of good human relations and good school adjustment for more of the students, as distinguished from mastery of academic skills, living would be happier for more adults as well as students" (p. 71).

The previous studies quoted involved only girls. Research done with boys is scant. One such study concerned a survey of the beliefs of high school principals, homemaking teachers, and parents about home economics offering for boys in Iowa (Buck, 1969). An open-ended format was used as the basis for a Likert-type mail questionnaire consisting of beliefs about roles (58 items) and barriers (25 items) to educational opportunities in home and family living for boys. Items concerned male roles in relation to food and nutrition, clothing and textiles, housing, home management and family economics, and human development and the family. The final sample consisted of 42 principals, 44 home economics teachers, and 70 parents of grade twelve boys.

Concerning the role of the male in the family, all three groups agreed that boys have the greatest role to play in human development and the family and then in housing. Clothing and textiles was the lowest in rank for all three groups. Parents viewed the male role more important in the field of food and nutrition than in home management and family economics whereas these were reversed for the principals and teachers. In all categories, for all groups, the social and psychological contribution of males was deemed more important than the mastery of the actual skills.

A majority of respondents in all groups agreed on the following barriers:

1. Boys do not see the value of taking home economics.
2. Reluctance of boys to take a course in home economics department.
3. Traditionally, it is not necessary to be accomplished in home and family life to be an acceptable male member in society.
4. There is little orientation to this field of study in the earlier grades.

In addition, parents and principals felt that in Iowa schools studied by Buck, home economics was not promoted as a course for boys. Teachers thought that there was a lack of understanding on the part of students and other educators of vocational opportunities in the field for boys. Buck concludes, however, that the barriers are not as formidable as thought to be and home economics for boys is justified.

Schools are mainly dominated by principals and faculties. It is difficult to meet aims and objectives when home economics is held in low esteem. Carr (1967) attempted to assess and improve principals' attitudes toward home economics in 11 states. The 19 schools sampled were private schools. Twenty-one administrators and 227 educators were involved in the study. A pre-test was administered, then a paper presenting the objectives, values, and modern trends in home economics was sent to each subject. Later the same test was administered to assess any change in attitude.

It was found that administrators demonstrated more change than instructors in all fields while teachers of traditional subjects showed the most change in attitude toward home economics of all instructors. The smaller the school, the more favorable the attitude was found to be, but professionals in large schools exhibited greater change in attitude. In large schools, less was known about home economics and it was more likely to be classified as a subject to be taken by those who could not master the "more academic subjects". Home economics was most often viewed in large schools as the teaching of skills.

The study demonstrated the value of informing administrators of the discipline. It was also recommended that home economics programs must not be allowed to deteriorate and the home economics teacher should take a more active role in improving and promoting her discipline.

Matters (1967) also conducted a study of beliefs and practices of home economics with administrators, this time in Iowa. Questionnaires concerning administrative practices dealing with home economics and beliefs about the program were sent to administrators of all schools in the state that had seventh and eighth grades.

Beliefs of administrators were generally positive, but there were certain areas where knowledge was found to be not completely accurate. Sixty-six per cent of the respondents saw the program as developing sewing and cooking skills and very few saw home economics as developing managerial skills. Home economics was viewed very positively as a course for girls but a minority of administrators felt that boys should have a course in this area at junior high school level. This was reflected in practice in that only seven per cent of schools studied offered home economics to boys. Most administrators stated that teacher training was of utmost importance and small classes were most beneficial for the course. Matters, however, did not attempt to relate the beliefs to practices.

Vossbrink (1966) studied attitudes toward home economics courses in Michigan Secondary Schools. Data were gathered by means of interviews and questionnaires from administrators in a random sample of 109 schools. Generally, administrators favored home economics for grades nine to twelve with nine and twelve being the most favorable grades. Home economics was viewed as a "sure" subject for girls but not suitable for boys. It was also felt that in considering achievement levels, home economics was designed for the "average" student, then the low one, and last of all, the high student. Administrators classed home economics as a subject for girls in the middle socio-economic class, though some did indicate it for the lower and higher classes. The administrators had a high regard for the "food and clothing" content in home economics but expressed mixed feelings about home and family living. Vossbrink reported all the raw data and percentages but no statistics were applied to the data to determine the significance of the results.

In a study of guidance counselors' perceptions of home economics, Becnel (1967) obtained data from 128 questionnaires answered by counselors employed in high schools which offered home economics. The questionnaire gathered information about the counselor's experience in his job and in relation to home economics, perceptions about the goals, content, and value of home economics, and his understanding of students. A positive relationship was found between counselors' experiences and perceptions and between perceptions and the tendency to recommend home economics to high school students. Almost one-half of the counselors perceived home economics as not challenging enough for the gifted student and over one-half had the tendency to recommend the course for slow learners. College-bound students were encouraged to take home economics by less than half of the counselors whereas more than half encouraged home economics enrolment if they thought a student wanted to quit school or enter the work world after graduation. In contrast to Vossbrink's study, Becnel found that over half of the counselors perceived home economics as being meaningful for boys.

Becnel concludes that unless the guidance counselor has the basic concepts of home economics, he cannot accurately interpret the program to others. She recommends improving the communication skills of home economics teachers for interpreting the home economics program for others.

In 1971, modern living was introduced as a new section of the home economics program in Alberta. Bowen (1974) assessed the attitude of a random sample of 86 Alberta junior high school home economics teachers toward modern living in junior high school. Bowen found that although the reaction to content of modern living was mostly favorable, reactions to format, resources, references and preparation or training for teaching the concepts were less favorable. Generally, modern living was not allotted the one-third home economics time that is suggested in the curriculum. Over-all, although there is definitely a student need in the area, teachers felt insecure in teaching the course.

In 1971, the Edmonton Public School Board commissioned a report on vocational education of which home economics was a part. Random samples of students, teachers, and counselors were administered a questionnaire on vocational education courses. It was found that counselors needed to become more knowledgable about all vocational education offerings.

There was generally a favorable response to home economics with high student interest. The counselors' influence to take home economics was low (9.3 per cent of the junior high school respondents and 10.7 per cent of the senior high school respondents claimed counselors had influenced them to take home economics). This finding was similar to what Hawkins (1967) found earlier.

Summary

The present study examines attitudes of principals, counselors, home economics teachers and students toward high school home economics program in Alberta. The studies cited earlier were mainly conducted in the United States. Home economics in Alberta may produce perceptions forming attitudes similar to or different from the studies already conducted.

CHAPTER III

DESIGN OF THE STUDY

Overview

The main purpose of the present study was to ascertain and compare attitudes of principals, counselors, home economics teachers, and students toward the three home economics courses at the senior high school level. Attitudes were determined by a favorable—unfavorable type of response to items on an opinionnaire administered to each of the groups.

Rationale for the Method of Data Collection

In order to assess the beliefs constituting the attitude toward home economics courses in Alberta high schools, an appropriate scale was required. A review of literature indicated that such a measure was not available and would have to be developed by the researcher. Oppenheim (1966), Payne (1951), and Edwards (1957, ch. 1) were used as guides in drawing up the opinionnaire and the items for it.

Development of the Instrument.

The instrument required in the present study had to be structured in such a way that it differentiated between negative and positive beliefs. Since attitude cannot be measured directly, it must be inferred from the statement of opinion which is the verbal expression of an attitude. When an individual states what he believes to be true, he is stating an opinion. The opinionnaire may serve as a measure of the beliefs that constitute an attitude.

The most common scales for evaluating beliefs are the Thurstone and Likert scales. The Likert method has certain advantages in comparison to the Thurstone scale of equal appearing intervals (Edwards and Kenny, 1967). Edwards and Kenny looked at a number of studies and concluded that reliability of the Likert scale was found to be as high or higher than other methods even with fewer items and results of the Thurstone and Likert methods were comparable. They also claim that a Likert instrument is easier to devise and the influence of a judging group, necessary for construction of the Thurstone scale is avoided in the Likert measure. Zimbardo and Ebbeson (1969) give the same points.

The Likert scale was chosen for this study because comparisons between groups may be readily made and because of its reliability with fewer items than would be required on a Thurstone scale. The shorter test would also be simple to administer and require only a short time to complete. The length of the test was kept at the minimum to yield an acceptable level of reliability and still avoid boredom. Although a longer test may give a higher reliability level on all possible questions, excessive length may introduce boredom and reduce reliability (Cronbach, 1960).

The questionnaire developed was an undisguised, structured type of test. Respondents knew that they were responding to a measure of opinions about home economics courses by the instructions preceding the measure and by the nature of the items themselves. By stressing that the accuracy of response was of great value to their contribution to the present research, it was hoped to encourage greater accuracy of response on the part of the respondent. When individuals feel that they are making a valuable contribution, particularly on a voluntary basis, this tends to favorably influence the individual's predisposition toward responding to the measure (Sherif, et al., 1965).

By structuring the test items and instructions for completing the test sufficiently, some amount of response bias which is a particular disadvantage of the Likert scale, is eliminated. This procedure is suggested by Cronbach (1946) on the grounds that the respondent knows exactly in what manner to enter his responses, there will be less tendency to guess and less chance of interference of carelessness.

Cronbach also offers other suggestions to reduce response sets concerning the answer alternatives on the Likert scale. Reducing the number of alternatives for a judgment and eliminating the neutral response may eliminate tendencies of evasiveness and extremeness bias. Suggested, also, is objective definition of the alternatives for the Likert scale.

To reduce the response bias and still obtain the information required for the testing of the hypotheses, a four-point "forced choice" response scale was chosen with the categories clearly defined. Since the researcher was also interested in determining the extent to which respondents were not knowledgable about the home economics program, a fifth alternative was included which was to be marked if the respondent did not possess the information necessary to form an opinion about the item. Although this could possibly be a basis for "evasiveness" bias, the benefits of including this category were considered to be greater than the unknown possibility of some biased responses occurring on the test. A description of the response alternatives are presented below:

1. - Strongly agree
2. - Mildly or somewhat disagree
3. - Mildly or somewhat agree
4. - Strongly disagree
5. - Insufficient information to form an opinion

The bias to guess or to use predominantly one category (systematic bias or acquiescence) can be corrected for by means of the split-half method for reliability (Cronbach, 1946). The split-half technique is more fully discussed in a subsequent section dealing with reliability of the test.

To record responses, an optical score sheet was chosen, making each individual's form ready for computer analysis. The instructions and questions were worded in a way making it convenient to respond on an answer sheet.

The use of the answer sheet saves time because there is no need to code and transfer answers from one form to another. This would also eliminate any errors that might occur during transfer. Students answering the opinionnaire were closely supervised in an attempt to observe and correct any errors that may have occurred in answering. Since the questionnaire was in two parts, each form handed in was also checked by the supervisor to ensure that responses were marked in the appropriate sections as the entire answer sheet was not used. Although instructions clearly indicated in what section to enter responses, some students still made unintentional errors in entry. Correction of this state affairs was a relatively simple matter. If responses to Part 2 were marked in Part 1, the paper was immediately returned to the person who had handed the paper in for appropriate correction. Mail opinionnaires were checked by the researcher and no such errors were found.

Selection of Items. The items forming the opinionnaire are statements of negative and positive beliefs concerning the value, status, content, and quality of home economics programs at the senior high school level. Clothing and textiles, food science, and modern living each formed a subtest on the total scale. From a review of literature, factors were determined about which respondents could express an opinion and which could be judged by experts as being a positive or negative belief. The belief or stated opinion about the relationship between an issue and the home economics course (the attitude-object) could be construed as positive or negative and attitude inferred from this.

The matrix used for the construction of the opinionnaire is presented in Figure 1 with the number of each test item in the appropriate block. The opinionnaire was constructed in two halves to obtain split-half reliability (see "The Reliability of the Instrument," ch. 3) and after each question number, A refers to the item positively worded and B refers to the item concerning the same concept but negatively worded.

Statements were written for each issue with a total of 42 items comprising the opinionnaire. The items were then taken to specialists at the university level to ascertain the face validity of the statements. Consulted were:

	Subtests		
	Clothing and Textiles	Food Science	Modern Living
Issue	Item No.	Item No.	Item No.
1. Comparison with other subjects	35 (A)* 30 (B)**	23 (A) 39 (B)	2 (A) 13 (B)
2. Sex	5 (A) 24 (B)	27 (A) 12 (B)	21 (A) 4 (B)
3. Student achievement level	1 (A) 22 (B)	20 (A) 8 (B)	16 (A) 38 (B)
4. Subject area content	19 (A) 31 (B)	9 (A) 41 (B)	25 (A) 33 (B)
5. Quality of the course	11 (A) 15 (B)	26 (A) 40 (B)	37 (A) 10 (B)
6. Value in terms of cost/expense	18 (A) 29 (B)	6 (A) 14 (B)	36 (A) 3 (B)
7. Teacher qualification	7 (A) 32 (B)	34 (A) 28 (B)	17 (A) 42 (B)

* (A) - positively worded item
**(B) - negatively worded item

Figure 1. Matrix for Opinionnaire Construction

Dr. Edith Down, co-ordinator of home economics education

Dr. Ann Harvey, associate professor of home economics education

Dr. Ann Kernalaguen, chairman of clothing and textiles in the school of home economics

Dr. Heidi Kass, associate professor of secondary education

Upon the recommendations of these people, items were modified or changed to more fully reflect beliefs about the home economics program.

Each item was then placed on a separate card and the researcher personally administered each item separately to two grade eleven girls from M. E. LaZerte Composite High School in the Edmonton Public School System. One student was of high academic ability and on a matriculation program while the other was of low academic ability and on the diploma route. Each subject was presented with the items separately and any reactions or questions were noted. Suggestions as to wording to aid in understanding an item were accepted, the item modified and then presented in revised form to the subject to determine if clarity was improved. This led to a rewording of some of the items in terms that a grade eleven student would understand.

The items were then placed in a random order for the opinionnaire. The entire opinionnaire including revised/reworded items was again presented to Dr. Down and Dr. Kass for scrutiny. Dr. Down examined the measure for appropriateness to the field of home economics and Dr. Kass examined it as being a measure of beliefs or opinions indicating an attitude. The revised opinionnaire was ready, then for the pilot study.

Assumptions of the Instrument

The opinionnaire drawn up and administered was based on the following assumptions about attitudes:

1. Attitudes toward home economics are measurable.
2. Attitude toward home economics are common to groups.
3. Subjects tested would exhibit a positive or negative attitude based on an opinion of what they believe to be true.
4. Subjects are aware of what they believe to be true and are able to express an opinion to this effect, even if they are not aware of the attitude they hold.
5. Students at the grade eleven level will have formed an opinion of course offerings at the high school, directly through contact with the course at junior high or senior high level or indirectly by social contact with others who have formed some beliefs concerning this field.
6. Principals will have formed some opinion about home economics courses which come under their administrative jurisdiction.
7. Counselors will have formed some opinion about home economics because of their roles in the schools of giving guidance to students in course selection and career orientation.
8. Home economics teachers hold opinions relative to their field of endeavor.
9. Beliefs reflect a predisposition toward the subject and may or may not be consistent with the election of the subject.

Use of a Written Questionnaire

Because of certain advantages, the written questionnaire was chosen in preference to the interview method. The use of the questionnaire method would permit the use of a larger sample than would be otherwise possible; it could be administered to groups of subjects; and it would eliminate any specific influence of the researcher in the administration of each individual item (Openheim, 1966).

In three different studies, Walsh (1967, 1968, 1969) found that the questionnaire yielded results as accurate as other methods, including the interview. Results of Walsh's 1967 study give equal credence to data gathered from the questionnaire, interview, and personal data blank. He suggests, then, that the choice of method will depend on considerations other than accuracy. Walsh (1968, 1969) found that even incentives to distort information gathered by interview and questionnaire methods had little effect on accuracy of self-report.

In another study, Alderfer (1967) found that when the same respondents were administered a questionnaire and also interviewed to obtain data for research, the questionnaire yielded as good results in accuracy as did the interview, but the respondent was more likely to feel exploited by the questionnaire than he was by the interview method. The social acceptability of an answer must also be considered. Some respondents may distort their answers in the interview situation in such a way as to appear socially acceptable (Helmstadter, 1970). If anonymity is assured, the questionnaire may overcome this. It was felt that a written opinionnaire would yield data of acceptable accuracy for the testing of hypotheses and answering of questions posed in the present study.

Use of the Mail Questionnaire

Contacting a sufficient number of subjects in the principal, counselor, and teacher groups posed a problem so it was decided to use a mail questionnaire with these groups. By using a mail questionnaire, more people could be contacted than by the interview method. Although Helmstadter (1970) cautions against the use of mailed questionnaires because of a small return (usually 20-40%), this study obtained a return of not less than 65% for each of the groups, yielding a greater sample size than could have been contacted by personal interview.

Wallace (1954) indicates that response to mail questionnaires is usually best from homogeneous universes and from people who possess a higher education. Since mail questionnaires were being used with only the principals, counselors, and teachers, a relatively homogeneous group considering their concerns for education and all with post-secondary training in their field, there was no reason to expect unusually low returns. To stimulate greater returns, anonymity of the respondent's answers was assured and a stamped, self-addressed envelope was enclosed so that cost to the subject would be only in terms of time, and even this was kept at a minimum.

The Reliability of the Instrument

The split-half method was employed to determine the reliability of the instrument. The Pearson product-moment correlation coefficient corrected by the Spearmen-Brown formula was used to ascertain the correlation between the two halves. With reference to the chart presented in Figure 1, all of the A items were combined and correlated with all B items.

The Pearson correlation coefficient (r) is a measure of the strength of relationship between two variables. Correlation values range from +1.0, denoting a perfect positive relationship, to -1.0, denoting a perfect negative relationship (Ferguson, 1971). The correlation coefficient indicates two things:

1. the magnitude of the relationship
2. the direction of the relationship as indicated by the sign of the coefficient

(Downie and Heath, 1974).

What constitutes a coefficient of acceptable magnitude is open to debate. Downie and Heath (1974) claim that r of 0.80 and above is considered a high coefficient, r = 0.50 moderate, and r = 0.30 or below is low for everyday usage in correlating tests. For reliability estimation, it is usually expected that r should be in the upper brackets, usually 0.70 to 0.98 (Guilford, 1965).

The correlation coefficient is interpreted in relation to a level of significance. The level of significance indicates how well the r represents a real correlation or what probability there was of r occuring by chance (Downie and Heath, 1974). A level of significance of 0.05 ($p < 0.05$) means there is a five per cent chance (5 times out of 100) of the observed non-zero correlation coefficient occurring by chance.

Guilford (1965) discusses the values of the correlation coefficient. He states that the coefficient is not like a percentage and doubling r does not mean twice the relationship. Correlations of zero or 1.00 can be expected when effects of the variables are tested in complete isolation. Anything else obtained is a result of the interplay of variables that cannot be measured in isolation. "Always, the coefficient of correlation is purely relative to the circumstances under which it was obtained and should be interpreted in the light of these circumstances, very rarely, certainly, in any absolute sense" (p. 105).

When the product-moment correlation coefficient is computed for the two halves of the test, this gives the reliability of a test half the length of the original test because of the split into two halves (Downie and Heath, 1974). To estimate the reliability of the total test, the Spearman-Brown formula is applied to correct the correlation coefficient. The Spearman-Brown formula is as follows:

$$r_{tt} = \frac{2\, r_{oe}}{1 + r_{oe}}$$

where r_{tt} = the reliability of the original test

r_{oe} = the reliability coefficient obtained by correlating the scores on one half of the items with the scores on the second half of the test (p. 238)

Table 1 gives the item numbers comprising the two halves of the test, the Pearson product-moment correlation coefficients (r) as computed by the computers SPSS system, the coefficient r_{tt} as corrected by the Spearman Brown prophecy formula. The correlation was computed for the test for the pilot study ($r = 0.75$, $p < 0.001$; $r_{tt} = 0.86$). This indicated that the test was reliable enough to be used in the main study and the correlation coefficients for each group indicate a relatively reliable instrument regarding internal consistency. It may be noted that males had the lowest reliability ($r_{tt} = 0.73$).

Table 1

Item Designation, Pearson Product-Moment Correlation (r) and Spearman Brown (r_{tt}) Coefficients for Split-Half Reliability for the Groups Tested

Test	Item Numbers
A	1, 2, 5, 6, 7, 9, 11, 16, 17, 18, 19, 20, 21, 23, 25, 26, 27, 34, 35, 36, 37
B	3, 4, 8, 10, 12, 13, 14, 15, 22, 24, 28, 29, 30, 31, 32, 33, 38, 39, 40, 41, 42

Group	Sample Size (N)	$r (p < 0.001)$	r_{tt}
Males	73	0.57	0.73
Females	89	0.76	0.86
Principals	16	0.86	0.92
Counselors	37	0.81	0.90
Teachers	34	0.75	0.86

The variation in reliability may be due to situational factors and/or bias in the responses even though the greatest precaution was taken to avoid this. Although response bias usually increases reliability, respondents using the "tendency to gamble" (guessing) or "acquiescence" bias might lower split-half reliability measures (Cronbach, 1946).

The Validity of the Instrument

The instrument was designed to measure beliefs concerning home economics courses at the senior high school level. Because of the nature of the items comprising the measure, a suitable validation of the instrument was content validity.

> "Content validity is established by showing that the test items are a sample of a universe in which the investigator is interested. Content validity is ordinarily to be established deductively, by defining a universe of items and sampling systematically within this universe to establish the test" (Cronbach & Meehl, 1955).

In content validation, accepting the content as defining the universe is essential. The universe established for this study is home economics courses at the senior high school level (i.e. clothing and textiles, food science, and modern living). Items were drawn up in this universe according to the matrix presented on page 49. For validation, the matrix and the items were presented to three specialists in the field of home economics--Dr. E. E. Down, Dr. Ann Harvey, and Dr. Ann Kernalaguen. Dr. Down and Dr. Harvey are specifically concerned with home economics education and Dr. Kernalaguen is a member of the faculty of household economics and had previously taught at the high school level in Alberta. Dr. Heidi Kass also reviewed the items with respect to representativeness of beliefs indicating attitudes of the universe.

After revising items according to suggestions given, the entire opinionnaire was reviewed once more by Dr. Down and Dr. Kass and then accepted as a sufficiently valid instrument for inferring attitudes toward home economics subjects at the senior high school level.

The Pilot Study

Purposes of the Pilot Study

The pilot study was conducted for several reasons:

1. To assess the "readability" of the opinionnaire. The pilot study would indicate the clarity of the instructions, how well the items were understood and if the form of the answer sheet was adequate.
2. To determine how long the instrument takes to complete and observe the interest level of the respondents.
3. To estimate the reliability (split-half) of the instrument.
4. To determine if the instrument is capable of measuring differences in beliefs.

Administration of Pilot Opinionnaire

Out of a list of Edmonton Public and Separate schools offering clothing and textiles, food science, and modern living, a school was randomly selected for the pilot test and the principal contacted. Permission for testing was granted with the principal selecting two classes for testing from Social Studies 20. Students in these classes were not streamed--there were males and females, students taking the diploma and matriculation patterns of study, and there were students of high and low ability in the classes. The sample for the pilot study consisted of 32 males and 19 females.

The researcher personally presented the opinionnaire in the form that it would be given to participants of the main study. Subjects were informed that their responses to the opinionnaire were important for establishing an appropriate measure for the study of opinions of.

home economics programs. If students had any questions or if something was not clear, they were to ask the researcher or point out difficulties to her. Any questions or difficulties were noted to be used for later revision.

As the subjects were responding on the test, the time taken for all subjects to complete the test was noted and subjects were observed to see if they were interested enough to work consistently on the instrument.

Results of the Pilot Study

The pilot study yielded the following results:

1. Students appeared to understand the instructions and the items on the opinionnaire. Even the low ability students participating in the pilot study asked no questions and no one pointed out any difficulties with respect to wording. Because some students were entering the "Part 2" responses in the "Part 1" section, there was an indication that there was a greater need to stress the entering of responses in the proper section. Instructions in the opinionnaire were appropriately changed. The researcher, being aware of this occurrence, however, was on guard to check the entering of responses in the appropriate section during the actual study.
2. Students worked steadily to the completion of the opinionnaire. Students who responded quickly were able to complete the measure in less than fifteen minutes while the slow ones took up to twenty-five minutes.

No appreciable amount of boredom was observed during administration of the scale and many of the students expressed interest in the final results of the opinionnaire.

3. The reliability of the scale was determined by the method described earlier (See "Reliability of the Instrument", ch. 3). The Pearson product-moment correlation coefficient was 0.75 ($p < 0.001$), with the Spearman-Brown formula yielding a split-half reliability of $r_{tt} = 0.86$.
4. Tests of significance were applied to determine differences in beliefs between males and females on the total test and each of the subtests. Data for the tests of significance are presented in Table 2.

The test, as a whole, showed a significant difference between males and females ($t = 3.41$; $p < 0.001$). There was a significant difference between males and females in the area of clothing and textiles, $t = 4.72$ ($p < 0.001$) with males having the lower mean. There was also a significant difference between the groups in their responses to food science items with $t = 2.65$ ($p < 0.01$). The modern living subtest showed no significant difference.

The results of the pilot study indicated that the opinionnaire developed was a suitable and convenient scale to measure beliefs about home economics programs.

Table 2

Means, Standard Deviations and Tests of Significance
for the Pilot Study (N = 51)

Variable	Group	Mean	Standard Deviation	Standard Error	F Value	2-Tail Probability	t Value	Degrees of Freedom	2-Tail Probability
Subtest 1 (Clothing and Textiles)	Males Females	2.65 3.12	0.38 0.28	0.07 0.07	1.82	0.184	4.72	49	0.001
Subtest 2 (Food Science)	Males Females	2.93 3.21	0.34 0.42	0.06 0.10	1.56	0.267	2.65	49	0.01
Subtest 3 (Modern Living)	Males Females	2.62 2.86	0.38 0.76	0.07 0.17	3.94	0.001	1.24*	49	0.20
Total Test	Males Females	8.20 9.19	0.86 1.22	0.15 0.28	2.00	0.087	3.41	49	0.004

* Separate variance estimate

The Sample

To obtain the necessary data for answering questions posed and for testing the hypotheses, it was necessary to test four groups of respondents. These were students, both male and female, principals, counselors, and home economics teachers.

The Sample of Students

To form an opinion about each of the three home economics courses, clothing and textiles, food science, and modern living, all three must be available as elective choices in the schools which students attend. The high schools in the Edmonton Public School System and Edmonton Separate School System which offer all three courses were of limited number. Modern living may not be available in all schools because it is a relatively new course, being first introduced in 1971. Teachers at the junior high level do not feel secure in the course (Bowen, 1974) and this may possibly be the case at the senior high school level as well.

Both school systems were contacted and a list of schools offering all three courses obtained. Since one school had been used in the pilot study, it was omitted from the main study.

Because there were so few schools offering all three home economics courses, it was possible to test a sample of students from each school. Students were chosen by the method of "cluster sampling" (Stuart, 1962) by which an entire class of students was administered the opinionnaire. The classes were randomly chosen by the principal of each school from English 20 or Social Studies 20 classes. English and Social Studies were chosen because both academic and diploma students usually take these courses whereas in other courses, the classes are usually predominantly matriculation students or diploma students. The Public and Separate schools provided three classes each for testing. Three of the classes were from English 20, one from Social Studies 20, and two from Humanities 20, a combined English and Social Studies.

The classes chosen met the following requirements:

1. they were coeducational
2. there was no streaming in ability; therefore the classes contained high and low ability students
3. they contained both diploma and matriculation students.

Students were in the chosen class due to their time-tabling pattern rather than for any other factor.

The Sample of Principals

The two Edmonton school systems include a total of 21 high schools. The principal of each school was included in the sample; therefore, the entire group was tested. Statistical techniques are based on random sampling but when the entire universe is included, no problem arises (Ferguson, 1971).

Of the 21 principals, 18 sent replies (85.7 per cent) but only 16 were usable (76.2 per cent). One form was incomplete and one principal felt he could not answer the opinionnaire because he was head of an all-boy school.

The Sample of Counselors

A complete list of counselors in high schools was not available from the school boards. Each school was contacted and the names of the counselors obtained. Here again, all counselors were sent opinionnaires for the study.

Of a possible 49, 38 opinionnaires were returned. This yields a 77.6 per cent response. One was received too late to be included in the analysis, giving a final yield of 75.6 per cent usable returns.

The Sample of Teachers

Lists of home economics teachers were obtained from the supervisors of home economics in the Edmonton Public and Separate School Systems. All teachers on these lists were included in the teacher sample to be sent opinionnaires. Opinionnaires were returned by 35 of the 49 teachers (71.4 per cent) with 34 (69.4 per cent) received in time for analysis.

Helmstadter (1970) states that usual mail surveys yield a return of 20 to 40 per cent. On that basis, the return rate for this study may be considered above average. This may be attributed to the homogeneity and university training of the groups (Wallace, 1954).

A better response may have been obtained had it not been for the timing of when the opinionnaires were mailed out. The opinionnaires were sent at the beginning of the second semester in January, a time when most educators are busy organizing and preparing for new classes. A mail strike shortly after the opinionnaires were mailed may also have interfered with the rate of return.

Data Collection

The collection of the data was conducted in two different ways. Intact class groups of students were administered the opinionnaire while mail questionnaires were sent to principals, counselors, and home economics teachers.

Student Data Collection

The researcher personally administered the opinionnaires to the classes chosen for the study. The printed instructions and scale, an answer sheet, and an HB pencil were provided for each individual.

Instructions on how to complete the opinionnaire preceded the scale and this was read by the researcher to the students to ensure that they were fully read. To ensure that the researcher would not influence responses, no elaboration was made concerning the instructions. Participants were allowed enough time to complete the opinionnaire with minimal pressure. Students were not allowed to confer with each other at any time during the testing situation.

As the respondents turned in their answer sheets, it was checked to see that forty-two responses had been entered in Part 1 and the rest in Part 2. Although care was taken to make instructions as clear as possible, some students still entered Part 2 responses in the Part 1 section of the answer sheet. All student data were collected in January, 1975.

Principal, Counselor, and Teacher Data Collection

A package consisting of a cover letter, the opinionnaire, an answer sheet, and a stamped self-addressed envelope was sent to each principal, counselor, and home economics teacher identified for this study on January 30, 1975. Two weeks later, a reminder letter was sent to encourage an increase in returns. An additional two weeks were allowed for return responses, then data were submitted for computer analyses on March 10. This appeared to be sufficient time for the return of responses. Only two forms were received after this date and were therefore unusable.

Tabulation of Data

The answer sheets were scanned for double marks and insufficient marks causing the computer to omit the response. Mail response sheets were checked to see if an HB pencil had been used.

The sheets were issued an identification number and then submitted to Computing Services at the University of Alberta. Here, two decks of cards were punched from the optical score sheets. The first deck contained a computer card for each individual stating the identification number and his responses to the forty-two items of Part 1 on the opinionnaire. The second deck contained a computer card for each individual stating the identification number and responses to Part 2 of the test.

Each identification number indicated the group to which the individual belonged, the school system of which he was a part, and for students, whether or not they had any experience with home economics courses. The first deck of computer cards was used for statistical analyses and the testing of hypotheses. General descriptive aspects of the groups were obtained from the second deck.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

Opinionnaires administered to 162 students (89 female and 73 male) and received from 16 principals, 37 counselors, and 34 teachers were used for analysis to determine attitudes toward home economics. Subjects recorded responses on an optical score sheet. The computer transferred responses from the score sheets to computer cards for various treatments. Scores for each of the subtests namely clothing and textiles, food science, and modern living, were obtained and used as a basis for statistical analyses in group comparisons.

This chapter presents the analysis and findings of the study in three sections: (1) statistical procedures, (2) general descriptions of the groups, and (3) results with discussion. The first section contains a description of the statistical procedures employed to analyse data for the testing of the hypotheses. General characteristics of the groups and descriptions of the schools from which they come are given in the second section. The last section presents the results of the opinionnaire in answer to questions posed and hypotheses generated.

Statistical Procedures

The General Statistical Approach

The data were analysed by the Statistical Package for the Social Sciences (SPSS) system from the Division of Educational Research Services at the University of Alberta. This system allows many different types of analyses in a convenient and simple manner due to a great deal of flexibility in the format of the data (Nie, et al., 1975). Simple, descriptive statistics such as frequency distributions and cross tabulations were generated by the system as well as means, standard deviations, and correlation coefficients. To test the null hypotheses, t-test, and one-way analysis of variance (Scheffé procedure) were calculated. Descriptions of the statistical methods were taken mainly from Ferguson (1971) and Nie, et al. (1975).

Statistical Analyses

To test the hypotheses, intra and inter-group comparisons of means on each of the subtests and for the total test were employed. The two types of statistics used to test the differences between means were the t-test and the Scheffé one-way analysis of variance procedure.

The t-test is used to evaluate the differences between effects rather than the effects themselves (Nie, et al., 1975). In the present study, the t-test was applied in two cases: (1) comparison of means of males and females, and (2) comparison of means of students having direct experience with home economics at some time and those who had never at any time received any instruction in it. The test was one for independent samples, that is, cases are classified into one of two groups and the t-test applied to the means of the two groups.

The t-value is defined as the ratio of the difference between the means divided by the standard error of the difference (Downie and Heath, 1974);

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{D\bar{X}}} \qquad \text{(p. 172).}$$

The t-test for the significance of difference between means assumes that distributions of the variables in the population from which the sample is drawn is normal (Ferguson, 1971). The larger the size of the sample, the closer the measures will come to a normal distribution and, in such a case, departures from normality will not substantially affect the estimation of probabilities, except in cases of extreme skewness. Ferguson claims that even for quite small samples, reasonably large departures from normality will not affect the estimation of probabilities for the t-test. Since the smallest group to which the t-test is applied is 53, it appears safe to assume that the t-test is an appropriate test for the significance of difference between means.

Two-tailed probability associated with t was calculated. The sign is ignored in two-tailed probability since interest is in inequality between means and the hypotheses do not assume a positive or negative t (Nie, et al., 1975). The null hypothesis (H_o) is rejected if the two-tailed probability for H_o is less than the probability level chosen.

The t-test cannot be used for populations of unequal variances (Nie, et al., 1975). In this instance, the population variance is not known so an F-test of sample variances was performed. F is computed by dividing the larger S^2 by the smaller S^2.

$$F = \frac{S_1^2}{S_2^2}$$

where S_1^2 = the larger of the two sample variances
S_2^2 = the smaller of the two sample variances

The F test evaluates the null hypothesis of no difference between the two population variances (Downie and Heath, 1974). A significance level for F is chosen (α'). This may be different from the significance level chosen for t (α). Based on α', the following generalizations are made concerning F:

> If the probability for F is greater than α', H_o is accepted; t based on the pooled-variance estimate for $\sigma_{\bar{D}}^2$* should be issued. If the probability for F is less than or equal to α', H_o is rejected; t based on the separate variance estimate for $\sigma_{\bar{D}}^2$ should be used (Nie, et al., 1975, p. 270).

When the two sample variances are pooled, a better estimate of population variance is obtained than would be by using each sample variance separately (Downie and Heath, 1974).

The t-test, then, in combination with the F-test, is used as the test for accepting or rejecting hypotheses 2 and 3.

The other hypothesis (1) is tested by Scheffé's one-way analysis of variance. The calculations were done by the SPSS subprogram ONEWAY which is limited to problems involving only one independent variable (Nie, et al., 1975). The independent variable was the group classification--student, principal, counselor, and teacher

* $\sigma_{\bar{D}}^2$ - population variance

response means being compared on each subtest, the subtest being constant. Ferguson (1971) gives the following description of the analysis of variance:

> The analysis of variance is a method for dividing the variation observed in experimental data into different parts, each part assignable to a known source, cause or factor. We may assess the relative magnitude of variation resulting from different sources and ascertain whether a particular part of the variation is greater than expectation under the null hypothesis (p. 208).

In adopting the analysis of variance, a number of assumptions are made:

1. The distribution of the dependent variable in the population from which the samples are drawn are normal.
2. The variances in the populations from which the samples are drawn are equal (homogeneity of variance). Gross departures from homogeneity may lead to serious error.
3. The effects of the various factors on the total variation are additive. In most cases, this assumption appears to be valid (Ferguson, 1971).

A test for homogeneity of variance which is relatively insensitive to departures from normality was developed by Scheffé (1959). Winer (1971) states that for the Scheffé procedure, each of the subsamples should be of approximately equal size, should be larger than three in size, and the size of each subsample, minus one, should be ten or more (p. 219). The sample sizes required by Winer seem to be unusually small since most writers advocate samples of 25 or more. Since each of the above criterion can be met by each of the subtests of the opinionnaire, the Scheffé analysis of variance is an appropriate test for comparing the means of all four groups. Also, the Scheffé test is exact, even for unequal group sizes (Nie, et al., 1975). The advantage of using this method is that it can compare the means of all groups, two at a time, which is desirable for testing of hypothesis 1 in the present research.

In comparison to other multiple comparison tests, the Scheffé method is the most rigorous with regard to Type I (α) error (Ferguson, 1971). It will lead to fewer significant differences than other methods would yield, but it is easy to apply, using the readily available F test, and the criterion it employs for evaluating the null hypothesis is simple and readily understood.

Level of significance. The statistics employed are interpreted in relation to significance levels for adoption or rejection of the null hypothesis (H_0). The significance level is indicated by the probability level "p". If the probability level is less than 0.05 ($p < 0.05$), the null hypothesis is rejected; if the probability is greater than 0.05 ($p > 0.05$), the null hypothesis is not rejected. All hypotheses will be rejected or not rejected at the $p < 0.05$ level.

Scoring the Likert Items

The instrument developed contained items to which respondents could react in one of four categories ranging from strongly disagree "1" to strongly agree "4". Response number "5" was to be employed when the subject felt he did not possess sufficient information to express an opinion.

Because of the split-half technique used in the opinionnaire, half of the items were positively worded and the other half negatively worded. A positive response to a positive statement would yield a "4" whereas a positive response to a negative statement would yield a "1".

For analysis, responses were scored 1, 2, 3, or 4 according to what the subject had indicated. Scores for the negative statements were reversed so that if a respondent indicated "1" he received a "4", "2" became "3", "3" became "2", and "4" became "1". In this way, a high score would indicate positive beliefs and low scores would reflect negative beliefs.

Where a respondent had used category "5", his response for that particular item was omitted from the analysis. The frequency with which this response was used was determined and used separately for other analyses.

Because of the scoring system used, the highest score possible on the opinionnaire was 168. If a respondent expressed a negative opinion to every item on the scale, the lowest score resulting would be 42. If a subject had a completely negative attitude and failed to express an opinion on some items (using category "5"), it would be possible to receive a total score of less than 42.

General Descriptive Characteristics of the Groups

Part 2 of the opinionnaire sought descriptive information from the respondents. From this, the computer tabulated frequencies and percentages for each question in the section. This is used as the basis for describing the various groups.

Students

There was a total of 162 students comprising the sample. Seventy-nine students (48.8 per cent) were from the Edmonton Public System with the remainder coming from Edmonton Separate Schools. Of the entire group, 86.3 per cent were matriculation students. The high number in this group may be explained by the fact that students not planning to continue with a post-secondary education could be attending a trades or vocational school, schools not included in the sample.

Sixty-two per cent of the sample had taken some home economics at the junior high school level. Seventy per cent had not taken and did not intend to take food science, while for clothing and textiles, it was 77 per cent and 81 per cent for modern living who had not taken the course and did not intend to. Direct exposure to home economics, then, came mainly from junior high school home economics. If beliefs are not based on direct contact with the attitude-object, then they may be formed indirectly through contact with other people--in the school situation, possibly other students, principals, counselors, and teachers.

Only 24 per cent and 25 per cent of the students were aware that food science 30 and clothing and textiles 30, respectively, were acceptable as university entrance in certain faculties.

Principals and Counselors

Since principals and counselors were asked the same questions, the results will be reported here together.

Principals from the public schools comprised 68.8 per cent of the sample while there were 62.2 per cent of the counselors from the same system. This is fairly representative since the Edmonton Public System is a larger school system than Edmonton Separate.

There was one school with less than 500 pupils; seven had between 500 and 1499 students and eight had over 1500 students. Of the counselors, 5 per cent came from schools with less than 500 students, 43 per cent came from schools having 500 to 1499 students, and 51 per cent came from schools with over 1500 students. Sixty-three per cent of the principals and 73 per cent of the counselors were involved with strictly senior high school while the remainder had a combination of high school with junior high or vocational or special education.

In the schools of which the principals were head, one did not offer food science, one did not offer clothing and textiles, and seven did not offer modern living. Nine schools claimed to offer modern living; however, it should be noted that in some schools, modern living was not a home economics course as defined in the home economics curriculum but a crafts course which may or may not have been taught by the home economics teacher. The investigator had checked these and eliminated such schools from the study. Counselors' responses were quite similar (97 per cent from schools offering food science, 95 per cent clothing and textiles, 62 per cent modern living).

The number of years in the particular position is given in Table 3.

Eighty-one per cent of the principals and 76 per cent of the counselors felt that home economics facilities in their school were adequate. Whereas only 25 per cent of the principals felt timetabling was a difficulty, 73 per cent of the counselors felt the same. Home economics courses, particularly clothing and textiles and food science are usually offered in "blocks" of time. These may be relatively easy to manipulate at the administrative level but may pose problems for individual student timetables which counselors usually help to figure out.

Where financing the program was concerned, the situation was

Table 3

Number of Years in a Particular Professional Position for Principals, Counselors and Teachers

Number of Years	Principal	Counselor	Teacher	
			Home Ec.	Total Teaching Years
		Percentages		
Less than 2 (3 for principals and counselors)	13	19	21	24
2 - 5 (3)	19	22	35	32
6 - 10	25	38	21	18
More than 10	44	22	24	26

reversed. This was seen as a problem by 38 per cent of the principals and 22 per cent of the counselors. Here again, principals, as administrators, would probably be more directly involved with financing problems in the school than would counselors.

The response for advising students to take clothing and textiles or food science as part of the matriculation program was similar for both groups--69 per cent of principals and 62 per cent of counselors at some time gave such advice.

Home Economics Teachers

A total of 34 teachers comprised the sample for the study, 70.6 per cent from public schools and the remaining from separate schools. Three per cent taught in schools with less than 500 pupils, 44 per cent where schools had between 500 and 1499 pupils and 53 per cent from schools with enrolments of over 1500. Sixty-five per cent of the sample came from strictly senior high schools. The remaining were from a combination of high school and either junior high, vocational, or special education schools.

Over one-half of the teachers (53 per cent) had a Bachelor of Education degree with a home economics major while 29 per cent had a Bachelor of Science degree with a home economics major. Nine per cent (3) had both and another 9 per cent had received their training in a field other than home economics.

Table 3 gives the number of years that respondents had been teaching courses in home economics. The greatest percentage (35 per cent) had taught from two to five years with a fairly equal frequency in the other three categories. The greatest percentage (35 per cent) had taught courses in home economics for two to five years. Seventy-seven per cent taught home economics full time and the remaining 23 per cent taught it for more than half time. Of the entire research sample at the time of the study, 44 per cent were teaching clothing and textiles, 79 per cent food science, and 29 per cent modern living.

Eighty-five per cent of the teachers felt that home economics facilities in their school were adequate, a higher percentage than either principals or counselors. Thirty-two per cent of the responding teachers felt that time-tabling for home economics courses was a problem but only 18 per cent felt financing to be a problem. Fewer teachers than principals and counselors viewed financing as a problem.

Results and Discussion

This section presents the results obtained from data analysis in answer to the questions posed in Chapter One. The first three questions are reformulated as null hypotheses while the remainder remain as questions. The null hypotheses are either rejected or not rejected on the basis of the statistical levels of significance obtained.

Null Hypothesis 1: There is no significant difference in the stated beliefs concerning the home economics program between

a. home economics teachers and students

b. home economics teachers and principals

c. home economics teachers and counselors

Table 4 presents the means, standard deviations, standard errors, range of scores and the 95 per cent confidence intervals for the means of each group for each of the subtests and the total test. Tables 5, 6, 7, and 8 present a summary of the analysis of variance for each subtest and the test as a whole.

For the test as a whole, the analysis of variance revealed a significant difference between home economics teachers and students and between the teachers and counselors ($p < 0.05$). There was no significant difference between teachers and principals.

For each of the subtests, namely clothing and textiles, food science, and modern living, the analyses of variance yielded the same results: a significant difference between teachers and students and between teachers and counselors ($p < 0.05$) with no significant difference between teachers and principals. Other differences found

Table 4

Summary of Means, Standard Deviation and Error, and Range for Groups on Each Subtest

	Group	Mean	Standard Deviation	Standard Error	Range		95% Confidence Interval for Mean
					Minimum	Maximum	
Subtest 1 (Cl Tx)	Students	2.77	0.395	0.031	1.57	3.86	2.71 - 2.83
	Principals	3.25	0.339	0.085	2.78	3.93	3.07 - 3.43
	Counselors	3.06	0.326	0.054	2.42	3.93	2.95 - 3.17
	Teachers	3.33	0.296	0.050	2.79	3.86	3.22 - 3.43
Subtest 2 (Ed. Sc.)	Students	2.94	0.404	0.032	1.38	4.00	2.88 - 3.00
	Principals	3.33	0.282	0.071	2.64	3.86	3.18 - 3.48
	Counselors	3.13	0.374	0.062	2.23	4.00	3.00 - 3.25
	Teachers	3.39	0.300	0.051	2.86	3.93	3.28 - 3.49
Subtest 3 (Mod. Liv.)	Students	2.76	0.506	0.040	0.0	3.93	2.68 - 2.83
	Principals	3.09	0.477	0.119	2.09	3.86	2.84 - 3.34
	Counselors	2.85	0.674	0.111	0.0	4.00	2.63 - 3.08
	Teachers	3.23	0.399	0.068	2.46	4.00	3.09 - 3.36
Total Test	Students	8.47	1.012	0.080	5.31	11.64	8.31 - 8.62
	Principals	9.67	0.934	0.233	7.86	11.36	9.17 -10.16
	Counselors	9.04	1.208	0.199	5.63	11.92	8.64 - 9.45
	Teachers	9.94	0.797	0.135	8.33	11.50	9.67 -10.21

Table 5

Summary of Analysis of Variance for Clothing and Textiles Subtest

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio	F Probability
Between groups	3	11.91	3.97	29.04	0.001
Within groups	246	33.64	0.14		
Total	249	45.55			

Significant differences ($p < 0.05$) were found between
(a) students vs counselors
(b) students vs principals
(c) students vs teachers
(d) counselors vs teachers

Table 6

Summary of Analysis of Variance for Food Science Subtest

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio	F Probability
Between groups	3	7.39	2.46	17.03	0.001
Within groups	246	35.56	0.14		
Total	249	42.95			

Significant differences ($p < 0.05$) were found between
(a) students vs principals
(b) students vs teachers
(c) counselors vs teachers

Table 7

Summary of Analysis of Variance for Modern Living Subtest

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio	F Probability
Between groups	3	7.30	2.43	9.01	0.001
Within groups	246	66.44	0.27		
Total	249	73.74			

Significant differences $(p < 0.05)$ were found between
(a) Students vs Teachers
(b) Counselors vs Teachers

Table 8

Summary of Analysis of Variance for Total Test

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio	F Probability
Between groups	3	77.43	25.81	25.19	0.001
Within groups	246	252.04	1.02		
Total	249	329.48			

Significant Differences $(p < 0.05)$ were found between
(a) Students vs Principals
(b) Students vs Counselors
(c) Students vs Teachers
(d) Counselors vs Teachers

are reported under question 6.

On the basis of the results of the analysis of variance, the null hypotheses 1a and 1c are rejected. Null hypothesis 1b is not rejected.

For every one of the subtests, students obtained the lowest mean, with counselors following, then principals, and finally teachers having the highest mean. The greatest range was for counselors on the modern living subtest ($\bar{X}$ = 0.0 to 4.00). Students also had a large range ($\bar{X}$ = 0.0 to 3.93). This affected the standard deviation, making it larger for these two groups than for other groups and any other subtests--counselors - S.D. = 0.674 and students - S.D. = 0.506.

The shortest range was for teachers on both the clothing and textiles and the food science subtests (Cl. Tx $\bar{X}$ = 2.79 to 3.86; Fd. Sc. $\bar{X}$ = 2.86 to 3.93). Teachers had the shortest range for all subtests, principals next. Students had the widest range for clothing and textiles and food science with counselors having the widest range for modern living.

For all groups, modern living showed the lowest means (students - 2.76; principals - 3.09; counselors - 2.85; teachers - 3.23) and food science the highest (students - 2.94; principals - 3.33; counselors - 3.13; teachers - 3.39).

Discussion. Results of the analysis of variance indicate that teachers and principals tend to perceive courses in home economics in a similar manner. Students and counselors tend to view the home economics course differently than do the home economics teachers. Principals and teachers tend to exhibit more positive beliefs about all three home economics courses than do counselors and students. Since counselors are instrumental in communicating and interpreting for students the school programs and arranging students' timetables and courses of study, this difference in perception of courses may have consequences for course enrolments. Counselors may not present the courses as favorably as would teachers in the field.

Also, since opinions are formed and modified by those with whom an individual has the closest interaction (Katz, 1954), students may affect other students' beliefs about home economics courses. For those who have little or no contact with the principal and home economics teacher, their opinions may be founded on what is learned about home economics courses from counselors and other students. These groups have been demonstrated to hold beliefs different from those of home economics teachers.

> Null Hypothesis 2: There is no significant difference in the stated beliefs concerning the home economics program between students who have had experience in a home economics course and students who have never been involved in home economics courses.

To determine if there was a significant difference between means of students who had elected to take a home economics course and those who had not, the t-test was applied. Students were classed in the "home economics" group if they had taken home economics in junior high, if they had taken any one or more of the courses offered at the senior high school level, or if they were presently enrolled in any of the home economics courses. Students who did not fit any of these criteria were classed as "non-home economics" and the means between the two groups compared.

One hundred and nine students were classed into the home economics group while 53 had not had any home economics courses at any time. Statistics are presented in Table 9 for all subtests and for the total test, the mean for the home economics group was significantly higher than for the non-home economics group.

Since population variances were not known, the F-test was applied to determine homogeneity of variance. The F test was not significant ($p > 0.05$) for the clothing and textiles and food science subtests and the total test, making the pooled variance estimate for t valid. For the modern living subtest, the F value was significant ($p < 0.001$), therefore the separate variance estimate had to be used for t.

For subtest number 1 (clothing and textiles), $t = 5.72$ which is significant at the 0.001 ($p < 0.001$) level for 160 degrees of freedom. For the food science subtest, $t = 5.20$ ($p < 0.001$). The remaining results were for modern living, $t = 2.39$ ($p < 0.02$) and the total test, $t = 5.38$ ($p < 0.001$), indicating a significant difference between the two groups for all subtests and for the test as a whole. On the basis of the results obtained on the t-test for significance of differences between means, the null hypothesis 2 is rejected.

Discussion: Students who had direct experience with home economics seemed to display a more positive opinion of home economics courses at the senior high school level than did those who had no home economics courses. It is possible that those who were directly involved with the program were better able to form more accurate beliefs about home economics offerings. It could, however, be equally feasible that the students' lack of participation in the program was a result of their beliefs about the courses.

Table 9

Significance of t-test for Differences Between Groups Which Have and Do Not Have Experience With Home Economics Courses

Variable	Group	Mean	Standard Deviation	Standard Error	F Value	2-Tail Probability	t Value	Degrees of Freedom	2-Tail Probability
Subtest 1 (Cl. Tx)	H. Ec.	2.88	0.386	0.037	1.62	0.05	5.72	160	0.001
	Non-H. Ec.	2.54	0.303	0.042					
Subtest 2 (Fd. Sc.)	H. Ec.	3.05	0.371	0.035	1.07	0.76	5.20	160	0.001
	Non-H. Ec.	2.72	0.383	0.053					
Subtest 3 (Mod. Liv.)	H. Ec.	2.81	0.562	0.054	2.72	0.001	2.39	160	0.02*
	Non-H. Ec.	2.64	0.341	0.047					
Total Test	H. Ec.	8.74	0.983	0.094	1.42	0.16	5.38	160	0.001
	Non-H. Ec.	7.90	0.825	0.113					

* The F-value is significant; therefore, the separate variance estimate of T is used. All other values are pooled variance estimates.

Since experience with home economics may affect perceptions of the course and because most of the students (62 per cent) had received their exposure to home economics at the junior high school level, there is the indication that the junior high home economics program plays an important role in developing positive attitudes toward subsequent home economics courses.

Null Hypothesis 3: There is no significant difference in the stated beliefs concerning the home economics program between male and female students.

The statistical analysis used for testing this hypothesis was the same as that used for testing Null Hypothesis 2. The basis for grouping was different with sex being the determining factor as to in which group a subject would be placed. There were 73 males and 89 females.

Table 10 presents the results of the t-test for the significance of difference between means of males and females. In all instances, means for males were significantly lower than for females. For each of the subtests and for the total test, the F value was non-significant indicating that pooled variance estimates of t were valid. It is pooled variance estimates that are reported in Table 10.

For the clothing and textiles subtest, $t = 6.09$ ($p < 0.001$); for the food science subtest, $t = 3.77$ ($p < 0.001$); for the modern living subtest, $t = 3.13$ ($p < 0.002$); and for the total test, $t = 5.57$ ($p < 0.001$). There is, then, definitely a significant difference between means of males and females leading to the rejecting of the null hypothesis 3.

Table 10

Significance of t-test for Male - Female Differences

Variable	Group	Mean	Standard Deviation	Standard Error	F Value	2-Tail Probability	t Value	Degrees of Freedom	2-Tail Probability
Subtest 1 (Cl. Tx)	Males	2.58	0.347	0.041	1.11	0.66	6.09	160	0.001
	Females	2.92	0.365	0.039					
Subtest 2 (Fd. Sc.)	Males	2.81	0.418	0.049	1.33	0.20	3.77	160	0.001
	Females	3.05	0.362	0.038					
Subtest 3 (Mod. Liv.)	Males	2.62	0.502	0.059	1.07	0.77	3.13	160	0.002
	Females	2.87	0.486	0.051					
Total Test	Males	8.02	0.911	0.107	1.07	0.76	5.57	160	0.001
	Females	8.83	0.944	0.100					

Discussion: The results of the study indicate that girls tend to view home economics more favorably than do boys. Since girls are more likely to have some experience with home economics programs at either junior high or senior high school level, the testing of hypothesis 3 may be somewhat related to hypothesis 2.

Because home economics courses have traditionally been considered a female course, boys still may not perceive the value of these courses for themselves. Also, in choosing a high school program, boys may view home economics as unsuitable for meeting their goals in school and in preparation for a career. Boys may overlook the career possibilities in the clothing, food, housing, and furnishing industries and research or social service fields, as well as personal satisfactions that may be offered at the high school level.

Question 4: Is the attitude toward home economics courses of each group tested predominantly positive or negative?

Means of the various groups on each of the subtests were examined to determine whether groups of individuals viewed home economics courses positively or negatively. A totally positive view would give a mean of 4 while a perfectly negative opinion would give a mean of 1. If half of the beliefs were positive and half were negative, the mean would be 2.50. Any mean above 2.50 would indicate more positive than negative beliefs.

Mean scores of various groups are presented in Table 11. None of the means were below 2.50 so the reaction to home economics courses are positive with some groups exhibiting a more positive mean than others.

From an examination of Table 11, the following observations can be made:

1. females had higher means than males on all three subtests
2. students who had experience in home economics had higher means than those who did not
3. for the four groups tested the order of means from lowest to highest on all subtests was students, counselors, principals, and teachers
4. for all groups, male, female, home economics, students as an entire group, principal, counselors, and teachers, excepting non-home economics students, the modern living subtest received the lowest mean
5. for non-home economics students, the clothing and textiles subtest received the lowest mean
6. the food science subtest received the highest mean for all groups

Discussion: It may be noted that food science has received the highest mean in all cases. This may relate to the fact that 79 per cent of the teachers were teaching food science in contrast to 44 per cent teaching clothing and textiles and 29 per cent teaching modern living. The result might also possibly be a reflection of a relationship between attitude and behavior as indicated by the choice to take the course.

It is well known that boys are more likely to enrol in food science than in clothing and textiles thereby increasing enrolments in the former course. Modern living is perhaps too new a course to make any generalizations about enrolments. It seems, though, that in the present study, modern living is viewed in a manner fairly similar

Table 11

Mean Scores for Each Group
Tested on Total Test and Subtests

Group	Subtests			Total Test
	Cl. Tx.	Fd. Sc.	Mod. Liv.	
Students				
Males	2.58	2.81	2.62	8.02
Females	2.92	3.05	2.87	8.83
Students				
H. Ec.	2.88	3.05	2.81	8.74
Non-H. Ec.	2.54	2.72	2.64	7.90
Students	2.77	2.94	2.76	8.47
Principals	3.25	3.33	3.09	9.67
Counselors	3.06	3.13	2.85	9.04
Teachers	3.33	3.39	3.23	9.94

to clothing and textiles. Food science has the advantage of advertising itself in a school by the smells emitted from food science laboratories. The appeal of food may draw the interest of more people than would the other courses which could not so advertise themselves. Food receives publicity in other ways as well--for example, the government and public concern for nutrition, media reports, and the visibility of the chef in food industry. Other home economics fields do not enjoy this exposure.

Question 5: What relationship exists between each of the subtests with each other and for the test as a whole?

Pearson product-moment correlation coefficients were calculated between each of the subtests with each other and with the total test for males, females, principals, counselors, and teachers. The correlation coefficient merely indicates any relationship between the two tests; there is no causality inferred. If a high positive or negative correlation has occurred, further study would be needed to determine the actual reason for the relationship.

For male students, each subtest correlated to a moderately high degree with the total test (Cl. Tx. $r = 0.75$, Fd. Sc. $r = 0.68$, Mod. Liv. $r = 0.73$, $p < 0.001$). Correlations between subtests were relatively low, with the clothing and textiles showing the largest relationship with food science ($r = 0.42$, $p < 0.001$).

Female subjects had higher correlations than males with $r = 0.78$ between clothing and textiles and the total test, $r = 0.80$ between food science and the total test, and $r = 0.76$ between modern living and the total test, (all $p < 0.001$). Clothing and textiles for these respondents was somewhat related to responses on the food science subtest ($r = 0.61$, $p < 0.001$), but modern living had a very low correlation with the other two subtests (r = less than 0.35).

Clothing and textiles and modern living were highly correlated with the total test ($r = 0.94$ and 0.88, respectively) for principals. Food science had an $r = 0.69$ with the total test. For this group, there was a fairly high relationship between clothing and textiles and modern living ($r = 0.76$) with a lower correlation between clothing and textiles and food science ($r = 0.61$). The coefficient for food science and modern living was low and non-significant.

All subtests correlated highly with the total test for the counselors ($r = 0.86$, 0.86, and 0.90 for Cl. Tx., Fd. Sc., and Mod. Liv., respectively). Clothing and textiles and food science were highly associated ($r = 0.81$) with modern living moderately related to clothing and textiles ($r = 0.60$) and food science ($r = 0.59$).

Table 12

Pearson Correlation Coefficients for
Total Test and Subtests for All Groups

Group		Correlation Coefficients			Level of Significance		
	Subtests	1	2	3	1	2	3
Males	2	0.42			0.001		
	3	0.32	0.12		0.003	0.161	
	T	0.75	0.68	0.73	0.001	0.001	0.001
Females	2	0.61			0.001		
	3	0.31	0.34		0.002	0.001	
	T	0.78	0.80	0.76	0.001	0.001	0.001
Principals	2	0.61			0.006		
	3	0.76	0.32		0.001	0.114	
	T	0.94	0.69	0.88	0.001	0.002	0.001
Counselors	2	0.81			0.001		
	3	0.60	0.59		0.001	0.001	
	T	0.86	0.86	0.90	0.001	0.001	0.001
Teachers	2	0.75			0.001		
	3	0.48	0.37		0.002	0.015	
	T	0.87	0.82	0.80	0.001	0.001	0.001

Results for teachers indicated a pattern similar to that of the counselors. Subtests when correlated with the total test yielded high coefficients (Cl. Tx., r = 0.87; Fd. Sc., r = 0.82; Mod. Liv., r = 0.80). Between subtest correlations showed a high correlation between clothing and textiles and food science (r = 0.75), a low-moderate correlation between clothing and textiles and modern living (r = 0.48) and a low correlation between food science and modern living (r = 0.37).

Discussion: Generally, correlations between subtests and the total test were relatively high for all groups, the lowest being r = 0.68 for boys on the food science-total test coefficient. There seemed to be a closer association between clothing and textiles and food science for all groups except principals than between either of the two with modern living. The principals' responses indicated a greater relationship between modern living and clothing and textiles than for any other combination.

Further study would be required to determine what factor or factors cause subjects to respond similarly to clothing and textiles and food science. Since these are part of traditional home economics courses and modern living is relatively new, individuals may still perceive the former two together but may have difficulty in relating the third to this field.

Question 6: Is there a difference in the stated beliefs concerning home economics courses between

a. students and principals?

b. students and counselors?

The results of the analysis of variance presented in Tables 5 to 8 inclusive indicated significant differences between students and principals and students and counselors on the subtests and total test.

There was a significant difference ($p < 0.05$) between principals and students on the clothing and textiles and food science subtests as well as on the total test. A significant difference ($p < 0.05$) occurred between students and counselors on the clothing and textiles subtest and on the total test. There was no significant difference on the food science and modern living subtests.

Discussion: The results reported under null hypothesis 1 and question 6 indicate that fewer differences exist between students and counselors than between students and principals and students and teachers. Students and counselors, however, indicated opinions which seemed to differ from those of principals and home economics teachers.

The finding that students and counselors also had lower means than the other two groups may possibly be a factor in rejecting home economics courses as an option in program planning. Supervisor's reports show enrolments drop steadily in each successive grade level from grade nine up (McFarlane, 1965-1973). Students and counselors are most closely involved with planning individual programs and schedules, and if the three home economics subjects are held in low esteem by both groups, there will be an avoidance of these courses.

Question 7: According to the judgment of experts in home economics education, what incongruent beliefs exist? In which group and with what average frequency?

The instrument constructed was based on the judgment of experts in deciding whether response to the items would indicate a congruent or incongruent belief. A more complete description of the scale construction was presented in Chapter 3.

To condense the responses for more meaningful reporting, the "strongly disagree" and "disagree" categories were combined into "disagree" and "strongly agree" and "agree" became "agree", giving one negative and one positive category. Results are presented in Tables 13, 14, and 15. For each "issue", there were two items, the first being the positively worded statement and the second the negatively worded statement. As previously explained, for the negatively worded items, the scores were reversed so that "agree" would designate a positive or correct belief.

There were two items on the questionnaire measuring a given belief about an aspect of the course; however, only the item with the higher negative response will be reported.

Clothing and Textiles. Students exhibited the greatest amounts of incongruent belief in relation to comparison with other subjects (62.0 per cent), sex (56.3 per cent), and student achievement (42.7 per cent). About one-quarter (25.4 per cent) possessed an incongruent belief about content in the area. Less than 25 per cent exhibited incongruent beliefs on any of the other items.

Forty per cent of the principals felt that clothing and textiles was not suitable for boys while 26.7 per cent felt that the course was unsuitable for matriculation students. Clothing and textiles was rated low in comparison with other subjects by 21.4 per cent of the principals and 21.4 per cent exhibited incongruent belief about content in the courses. There was almost unanimous positive agreement on quality of the course, value in terms of cost, and teacher qualifications.

Table 13

Proportion of Response in Disagree-Agree Categories
for Clothing and Textiles Subtest

Issue	Item Number	Students		Principals		Counselors		Teachers	
		D*	A*	D*	A*	D*	A*	D*	A*
Comparison with other subjects	35	41.1	58.9	21.4	78.6	38.9	61.1	12.9	87.1
	30	62.0	38.0	13.3	86.7	29.4	70.6	15.6	84.4
Sex	5	29.9	70.1	40.0	60.0	35.1	64.9	8.6	91.4
	24	56.3	43.7	18.8	81.3	37.1	62.9	26.5	73.5
Student achievement	1	42.7	57.3	0.0	100.0	2.7	97.3	3.0	97.0
	22	33.3	66.7	26.7	73.3	10.8	89.2	0.0	100.0
Subject area content	19	25.4	74.6	21.4	78.6	29.6	70.4	16.7	83.3
	31	23.9	76.1	15.4	84.6	9.5	90.5	12.9	87.1
Quality of course	11	18.3	81.7	0.0	100.0	17.9	82.1	10.0	90.0
	15	16.7	83.3	0.0	100.0	17.1	82.9	6.1	93.9
Value in terms of cost/ expense	18	22.1	77.9	12.5	87.5	5.9	94.1	0.0	100.0
	29	20.7	79.3	0.0	100.0	3.0	97.0	2.9	97.1
Teacher qualification/ preparation	7	9.8	90.2	0.0	100.0	0.0	100.0	6.1	93.9
	32	11.7	88.3	6.7	93.3	5.6	94.4	2.9	97.1

* D - Disagree
A - Agree

Table 14

Proportion of Response in Disagree-Agree Categories for Food Science Subtest

Issue	Item Number	Students		Principals		Counselors		Teachers	
		D*	A*	D*	A*	D*	A*	D*	A*
Comparison with other subjects	23	57.6	42.4	7.1	92.9	30.6	69.4	5.9	94.1
	39	31.8	68.2	13.3	86.7	33.3	66.7	12.5	87.5
Sex	27	12.2	87.8	0.0	100.0	2.7	97.3	5.7	94.3
	12	8.1	91.9	0.0	100.0	2.7	97.3	2.9	97.1
Student achievement	20	11.9	88.1	0.0	100.0	0.0	100.0	2.9	97.1
	8	34.4	65.6	18.8	81.3	10.8	89.2	0.0	100.0
Subject area content	9	7.6	92.4	0.0	100.0	5.7	94.3	2.9	97.1
	41	38.3	61.7	21.4	78.6	14.3	85.7	17.6	82.4
Quality of course	26	36.7	63.3	21.4	78.6	30.0	70.0	25.7	74.3
	40	56.4	43.6	21.4	78.6	58.8	41.2	20.6	79.4
Value in terms of cost/ expense	6	31.2	68.8	12.5	87.5	2.9	97.1	2.9	97.1
	14	9.1	90.9	0.0	100.0	5.4	94.6	3.0	97.0
Teacher qualification/ preparation	34	14.9	85.1	0.0	100.0	8.1	91.9	5.7	94.3
	28	5.1	94.9	0.0	100.0	5.4	94.6	2.9	97.1

* D - Disagree
A - Agree

Table 15

Proportion of Response in Disagree-Agree Categories for Modern Living Subtest

Issue	Item Number	Students		Principals		Counselors		Teachers	
		D*	A*	D*	A*	D*	A*	D*	A*
Comparison with other subjects	2	41.0	59.0	46.7	53.3	52.9	47.1	21.2	78.8
	13	65.8	34.2	75.0	25.0	71.4	28.6	40.6	59.4
Sex	21	16.8	83.2	6.7	93.3	17.6	82.4	0.0	100.0
	4	28.0	72.0	13.3	86.7	13.9	86.1	11.8	88.2
Student achievement	16	47.9	52.1	26.7	73.3	19.4	80.6	21.2	78.8
	38	14.6	85.4	18.8	81.3	8.8	91.2	8.6	91.4
Subject area content	25	7.0	93.0	12.5	87.5	11.1	88.9	2.9	97.1
	33	43.3	56.7	20.0	80.0	32.4	67.6	19.4	80.6
Quality of course	37	10.0	90.0	7.1	92.9	12.9	87.1	9.4	90.6
	10	23.7	76.3	0.0	100.0	22.2	77.8	9.4	90.6
Value in terms of cost/ expense	36	27.2	72.8	15.4	84.6	13.3	86.7	12.5	87.5
	3	32.2	67.8	6.7	93.3	9.4	90.6	6.5	93.5
Teacher qualification/ preparation	17	13.1	86.9	0.0	100.0	11.8	88.2	8.8	91.2
	42	10.6	89.4	0.0	100.0	11.4	88.6	8.8	91.2

* D - Disagree

A - Agree

Counselors showed disagreement for comparison with other subjects (38.9 per cent), sex orientation (37.1 per cent) and subject area content (29.6 per cent). Over 80 per cent of the counselors responded favorably to items concerning quality of the course, value in terms of cost, and teacher preparation.

Overall, home economics teachers indicated congruent beliefs about clothing and textiles except for sex orientation (26.5 per cent "D") and comparison with other subjects (15.6 per cent "D").

Food Science: In comparison with other subjects, 57.6 per cent of the students did not believe that information offered in food science was as important as what was offered in other matriculation courses. 56.4 per cent thought that food science involved less in-depth thinking than matriculation courses; 38.3 per cent agreed that the main emphasis was the cooking of food. Food science was viewed as being more important for diploma rather than academic students by 34.4 per cent. As many as 31.2 per cent of the students felt that the importance of the subject did not justify the cost of facilities and equipment. A majority of students agreed that food science was suitable for both sexes (91.9 per cent) and that a teacher had to be a specialist in the field (94.9 per cent).

Principals showed the greatest proportion of incongruent beliefs when agreeing that the course is mainly the cooking of food (21.4 per cent) and did not involve difficult theory and problem-solving ability: 18.8 per cent felt that the course was more important for diploma students rather than matriculation pupils. Other areas showed that principals had a fairly accurate perception of food science (85 per cent and above).

A majority of counselors (58.8 per cent thought the quality of the course poor as far as in-depth thinking was involved. Food science was rated by 33.3 per cent of the counselors as undeserving of credit equal to that of other matriculation subjects. Items assessing other aspects of beliefs received a fairly positive rating (90 per cent and above).

Two areas of food science in which teachers did not respond in a completely favorable way were in content and quality of the program. That the course was mainly the cooking of food was indicated by 17.6 per cent of the teachers and 25.7 per cent did not feel that the course involved difficult theory and problem-solving ability. It was also indicated by 12.5 per cent of the teachers that food science should not receive credits equal to those of matriculation subjects. All other areas had over 90 per cent positive response.

Modern Living: In modern living, 65.8 per cent of the students felt the course should remain as an option not acceptable for university entrance; 47.9 per cent would not encourage all interested students, regardless of marks, to take the subject. As well, 43.3 per cent felt the content in modern living should be obtained outside the school and 32.2 per cent thought money could be better spent on other courses. Twenty-eight per cent did not feel the course would be of use to boys. The subject was judged not challenging enough by 23.7 per cent of the students. Special teacher training for the course was not a necessity for 13.1 per cent of the students.

Principals felt most strongly that modern living should remain as an option (75 per cent). Encouragement to high and low achievement students would not be given by 26.7 per cent of the principals.

Twenty per cent indicated that modern living content should be learned outside the school and 15.4 per cent felt that benefits of the course did not warrant the money spent on it. The other aspects received fairly positive reaction (85 per cent +) with 100 per cent agreement that a teacher required special training to offer the course.

Modern living should remain an option according to 71.4 per cent of the counselors with 32.4 per cent voicing an opinion that the content should be obtained outside the school. Other incongruent beliefs were that the course was too easy (22.2 per cent), not all students, regardless of marks should be encouraged to take the subject (19.4 per cent), content was not of use to both sexes (17.6 per cent), and benefits were not worth the money spent on it (13.3 per cent). Special teacher training was viewed positively by over 88 per cent of the counselors.

A fairly large proportion of teachers (40.6 per cent) indicated that modern living should remain an option and not all interested students regardless of achievement should be encouraged to take the course (21.2 per cent). Almost one-fifth (19.4 per cent) of the teachers thought content offered in this program should be obtained outside of school with 12.5 per cent voicing the opinion that benefits of the course were not worth the money spent on it. Over eleven per cent stated that boys would find the subject of little use to them. All other items had a negative response of less than 10 per cent.

Discussion: Beliefs were rated congruent or incongruent by specialists in the field. According to these specialists, a number of incongruent beliefs were identified in the various groups (more than 25 per cent indicating the belief). The following list summarizes the incongruent beliefs existing in each of the groups tested.

Students

1. clothing and textiles is not as important as other matriculation subjects
2. clothing and textiles is of little use for boys
3. clothing and textiles is of more use to non-academic students
4. clothing and textiles does not involve difficult theory
5. food science is not as important as matriculation subjects
6. food science does not involve in-depth thinking (problem-solving ability)
7. food science is concerned mainly with cooking food.
8. food science is most useful for diploma students
9. the cost for food science is unjustified
10. modern living should remain an option unacceptable for university entrance
11. not all interested students should be encouraged to take modern living
12. content offered in modern living should be obtained outside of school
13. money spent on modern living could be better spent on other subjects
14. modern living is of little use to boys
15. modern living offers little challenge to students

Principals

1. boys would find clothing and textiles of little use
2. clothing and textiles is more important for diploma rather than matriculation students

3. modern living should remain an option unacceptable for university entrance
4. all interested students should not be encouraged to take modern living

Counselors

1. clothing and textiles is not as important as other matriculation subjects
2. clothing and textiles is of little use to boys
3. clothing and textiles does not offer difficult theory
4. food science involves little in-depth thinking
5. food science should not receive credit equal to that of other matriculation subjects
6. modern living should not be made acceptable for entrance to university
7. content in modern living should be obtained outside the school

Teachers

1. clothing and textiles is of little use to boys
2. food science does not involve difficult theory and problem-solving ability
3. modern living should remain an option unacceptable for university entrance

Because the beliefs were judged by experts familiar with the curriculum drawn up for the courses, some of the beliefs judged incongruent on the instrument may actually reflect some of the practices in the schools since the subjects are not always taught according to the curriculum. One of the limitations of this study is that there is no distinction between beliefs about home economics courses as outlined in the curriculum or as actually practiced.

The identification of these incongruent beliefs along with the groups possessing them can form the basis for communicating more congruent beliefs about the subjects to the appropriate groups.

Question 8: Are there areas in home economics about which respondents are not knowledgeable? In which groups and with what average frequency?

Category five in the response choices of the Likert scale was the basis for answering this question. Respondents were instructed to use category "5" when they felt that they did not possess sufficient information with which to form an opinion about the given item. Frequency of response was tabulated and percentages calculated for each group of respondents. Results are presented in Table 16. Of the two items concerning the same issue, only the one with the greater percentage of non-response will be discussed.

Very few subjects were unable to voice an opinion concerning the comparison of home economics courses with other subjects, the highest being 12.5 per cent (two principals) on the food science subtest. In considering whether the program is suitable for both boys and girls, non-response was very low (below seven per cent) for all groups on the clothing and textiles and food science subtests. Modern living, however, was different: 26.5 per cent of the students did not respond to the item of its suitability for both sexes. For the other groups, non-response on the same item was less than ten per cent.

All groups were relatively low in non-response on all items

Table 16

Frequency and Proportion of Response in Category 5
(Non-response category)

		Subtest																							
		Clothing and Textiles								Food Science								Modern Living							
		S*		P*		C*		T*		S		P		C		T		S		P		C		T	
Issue	Total f	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Comparison with other subjects	36	4	2.5	2	12.5	1	2.7	3	8.8	11	6.8	2	12.5	1	2.7	1	2.9	6	3.7	1	6.3	3	8.1	1	2.9
	37	12	7.4	1	6.3	3	8.1	2	5.9	5	3.1	1	6.3	1	2.7	2	5.9	6	3.7	1	6.3	2	5.4	2	5.9
Sex	60	5	3.1	1	6.3	-	-	-	-	6	3.7	-	-	-	-	-	-	43	26.5	1	6.3	3	8.1	1	2.9
	38	11	6.8	-	-	2	5.4	1	2.9	2	1.2	1	6.3	-	-	-	-	19	11.7	1	6.3	1	2.7	-	-
Student achievement	27	5	3.1	-	-	-	-	1	2.9	2	1.2	-	-	-	-	-	-	16	9.9	1	6.3	1	2.7	1	2.9
	36	6	3.7	1	6.3	-	-	-	-	8	4.9	-	-	-	-	-	-	18	11.1	-	-	3	8.1	-	-
Subject area content	189	91	56.2	2	12.5	10	27.0	4	11.8	31	19.1	-	-	2	5.4	-	-	47	29.0	-	-	1	2.7	1	2.9
	191	74	45.7	3	18.8	16	43.2	3	8.8	42	25.9	2	12.5	9	24.3	-	-	35	21.6	1	6.3	3	8.1	3	8.8
Quality of course	181	53	32.7	1	6.3	9	24.3	4	11.8	53	32.7	2	12.5	7	18.9	-	-	42	25.9	2	12.5	6	16.2	2	5.9
	147	36	22.2	-	-	2	5.4	1	2.9	22	13.6	2	12.5	3	8.1	-	-	65	40.1	4	25.0	10	27.0	2	5.9
Value in terms of cost/expense	114	26	16.0	-	-	3	8.1	-	-	21	13.0	-	-	3	8.1	1	2.9	48	29.6	3	18.8	7	18.9	2	5.9
	68	27	16.7	1	6.3	4	10.8	1	2.9	8	4.9	1	6.3	-	-	1	2.9	16	9.9	1	6.3	5	13.5	3	8.8
Teacher qualification	43	9	5.6	-	-	-	-	1	2.9	8	4.9	-	-	-	-	-	-	25	15.4	-	-	3	8.1	1	2.9
	36	8	4.9	1	6.3	1	2.7	-	-	4	2.5	-	-	-	-	-	-	20	12.3	-	-	2	5.4	-	-
Total		367		13		51		21		223		11		26		5		405		15		50		19	

* S - students P - principals C - counselors T - teachers f - frequency

stating that home economics programs could provide benefits for students of all achievement levels. The highest was 11.1 per cent (18) of the students marking category "5" for the item expressing the belief that all interested students, whether they achieve high or low marks, should be encouraged to take modern living.

Items assessing reaction to the subject area content met with the greatest number of non-responses. Approximately one-half of the students (56.2 per cent) were unfamiliar with what was offered in the clothing and textiles program. For subject area content, on the food science subtest, 25.9 per cent of the students did not state an opinion while 29.0 per cent did the same for modern living. Of the counselors, 43.2 per cent did not state an opinion on an item relating to content in clothing and textiles. Considering the same issue, students most often used category "5" in food science (25.9 per cent) and modern living (29.0 per cent). Counselors, as well, indicated it 24.3 per cent of the time on one item about content of the food science program. All others were relatively low.

A number of subjects were unable to state an opinion about the quality of the courses. About one-third (32.7 per cent) of the students, 6.3 per cent of the principals, 24.3 per cent of the counselors, and 11.8 per cent of the teachers rated "5" for the positive item in clothing and textiles. The positive item concerning quality in food science had the following non-response: 32.7 per cent of the students, 12.5 per cent of the principals, and 18.9 per cent of the counselors. All teachers responded to the item. In modern living, more individuals decided not to give an opinion on the negative item--40.1 per cent of the students, 25.0 per cent of the principals, 27.0 per cent of the counselors, and 5.9 per cent of the teachers.

In considering whether or not the courses are worth the money spent on them, students formed the largest proportions not responding in all three areas followed next by counselors, particularly in the modern living area. Principals and teachers used the no response category in fairly low proportion.

For teacher qualification, non-response was low (below 6 per cent) for all groups on the clothing and textiles and food science subtests. In modern living, the highest proportion not responding to the item on teacher qualification was 15.4 per cent of the students and 8.1 per cent of the counselors.

Totals of the frequencies on each item (across on the table) were obtained and the same was done for each of the groups (downward on the table) on each subtest. The raw score totals indicated areas and groups in which knowledge was lacking. Modern living drew the greatest number of non-response (489) with clothing and textiles next (452) while food science had the least (265). In all three areas, students formed the largest proportion not responding with counselors following. Teacher and principal non-response were fairly low. The items which showed the greatest amount of acquiescence were those dealing with subject area content (380) and the quality of the course (328). Value in terms of cost was next (182) but this was substantially lower than the other two. All other items were even less than this.

Discussion: The results indicate some lack of knowledge in modern living and clothing and textiles, more so than in food science. The fact that the deficiency occurred mostly in subject area content and quality of the course suggests that more could be done to inform individuals about these aspects. Students and counselors demonstrate the most need for information in these categories.

Summary of Results

The present study yielded results similar to many of the studies on attitudes and enrolments related to home economics cited in chapter II. There was a significant difference in attitude toward the secondary home economics program between students and home economics teachers, between counselors and teachers, between students and principals, between male and female students, and between students who had at one time taken a home economics course and those who had no such experience. Generally, students had the lowest means, counselors next, then principals, with teachers exhibiting the highest mean. Modern living received the lowest means for all groups; food science received the highest mean.

These results plus the identification of negative beliefs and of areas in which information about the home economics program was lacking form the basis for the recommendations presented in the following chapter.

CHAPTER V

SUMMARY AND CONCLUSIONS

Review of the Problem and Procedures

With the demand for excellence and emphasis on academic programs, home economics courses, despite the benefits they offer to students, do not seem to hold a very prestigious position in the hierarchy of subject offerings. A review of literature mainly written in the United States revealed that not all groups of individuals view the field as favorably as do the instructors of the courses. Research in the area of home economics attitudes is very limited in Alberta.

The present study was structured, then, to determine beliefs held by principals, counselors, and students concerning senior high school home economics programs and compare these with the beliefs of home economics teachers. Comparisons between male and female students and also between students who had home economics experience and those who had none were performed. Research was also aimed at discovering any negative (inaccurate) beliefs with the intention of recommending action for structuring a more positive approach to the program.

The study was limited to senior high schools in the city of Edmonton with four groups being sampled--principals, counselors, home economics teachers, and students at the grade eleven level.

The sample chosen consisted of all principals, counselors, and home economics teachers at senior high school level in the Edmonton Public and Separate Schools. A mail questionnaire resulted in a usable response from 76.2 per cent of the principals, 75.6 per cent of the counselors, and 69.4 per cent of the teachers. The opinionnaire was administered by the researcher to a random cluster sample of 162 students from both systems. The classes chosen consisted of mixed ability, co-educational groups.

A Likert-type of instrument was constructed with fourteen items for each of the subtests: clothing and textiles, food science, and modern living. Two items in each subtest were concerned with each of the following issues: comparison with other subjects, sex, student achievement, subject area content, quality of the course, value in terms of cost or expense, and teacher qualification. One item was positively worded while the second was negatively presented and then all items randomly distributed on the measure. This gave a split-half method for determining internal reliability.

Specialists in home economics education at the university level established content validity for the instrument. Two grade eleven students helped with wording for readability and interpretation of the items.

Responses were recorded on a 4-point rating scale from "strongly disagree" to "strongly agree". A fifth category was to be used only if the respondent did not possess enough information to voice an opinion on an item.

A pilot study was conducted with 32 males and 19 females in Social Studies 20 to assess readability, reliability, and amount of time necessary to complete the opinionnaire. Results of the pilot study indicated that the test was at the students' level and took about 20 to 25 minutes to complete. The Spearman-Brown formula yielded a coefficient of 0.86 as a reliability measure. The t-tests performed with pilot data signified that the opinionnaire would differentiate groups with various opinions.

Data for the study were collected in January, 1975 by mail questionnaires from principals, counselors, and teachers and a researcher-administered opinionnaire for students. Responses were recorded on an optical score sheet which was later assigned an identification number and submitted for computer punching, tabulation, and analyses.

The Statistical Package for the Social Sciences (SPSS) provided frequencies, proportions, cross tabulations, Pearson product-moment correlation, Sheffé's one-way analysis of variance, and the t-test for analysis of the data for testing hypotheses and answering questions. Measures at the 0.05 level ($p < 0.05$) were interpreted and reported as significant while any above that level were taken as not being meaningful.

Summary of Results

H_o1: There is a significant difference in the stated beliefs concerning the home economics program between

(a) home economics teachers and students

(b) home economics teachers and principals

(c) home economics teachers and counselors

On the basis of results obtained from Scheffé's one-way analysis of variance, the null hypotheses 1a and 1c were rejected and H_o1b was not rejected. There was a significant difference between teachers and students and between teachers and counselors on all subtests and the total test. There was no significant difference between teachers and principals.

Other significant differences indicated were between principals and students on the clothing and textiles and food science subtests as well as the entire test and between counselors and students on the clothing and textiles subtest and total test.

H_o2: There is no significant difference in the stated beliefs concerning home economics courses between students who have had experience in a home economics program and students who have never been involved in the home economics program.

This hypothesis was rejected. The t-tests showed differences between the two groups on all subtests and on the total test.

H_o3: There is no significant difference in the stated beliefs concerning the home economics program between male and female students.

The null hypothesis 3 is rejected because t-tests performed yielded significant differences between males and females on all subtests and the total test.

Questions related to the hypotheses but not a distinct part of them were answered from the data collected.

All means were above 2.5 for all of the subtests: the means, then, were all favorable, but some more favorable than others. The order for means from lowest to highest on all subtests were students, counselors, principals, and teachers.

When students' means were sorted, it was found that females had higher means than males and those with home economics experience had higher means than those lacking experience.

Generally, modern living usually had the lowest means of all the subtests with clothing and textiles next, and food science having the highest mean.

Pearson product-moment correlation coefficients calculated between subtests with each other and with the total test indicated a fairly high relationship between subtests and the total test. Also, clothing and textiles was more closely related to food science than either of the two were with modern living for all groups except principals. Principals associated clothing and textiles with modern living.

Students exhibited a greater number of incongruent beliefs than any other group. The students did not consider clothing and textiles as important as other matriculation subjects, of use for males, of use to academic students, and as offering challenging theory. The same group felt that the cost of food science was unjustified; that food science was mainly the cooking of food and involved little problem-solving ability; and that the program is not as important as other matriculation subjects and is most useful for diploma students. Students indicated that they considered modern living of little use to males. It was seen as offering little challenge to students and the content offered in the program should be obtained outside of school. The subject, according to the students, should not be made acceptable for university entrance and not all interested students, regardless of achievement level, should be encouraged to take it.

Counselors seem to believe that clothing and textiles is not as important as other matriculation subjects, is of little use to boys, and does not offer difficult theory. The same group seems to feel that food science involves little in-depth thinking and is not as important as other matriculation subjects. The belief that modern living should not be made acceptable for university entrance and that content in the course should be obtained outside the school was also expressed by the counselors.

Principals indicated that they feel that clothing and textiles is of little use to boys and lacks importance for matriculation students. They also seem to believe that modern living should not be accepted for university entrance and not all interested students of varied achievement levels should be encouraged to elect it.

Home economics teachers exhibited the following incongruent beliefs: clothing and textiles is of little use to boys, food science does not involve difficult theory and problem-solving ability, and modern living should remain an option unacceptable for university entrance.

A lack of sufficient information to form an opinion was indicated by some respondents. Students showed the greatest lack of information concerning programs with counselors next. Least was known about modern living and clothing and textiles by all groups. Subject area content and quality of the course were the two issues about which all respondents knew the least.

On the basis of the results, the following generalizations concerning senior high school home economics programs are formulated

1. Students and counselors perceive the home economics program at the senior high school level significantly differently from home economics teachers with the former exhibiting a greater proportion of negative beliefs concerning the program.
2. Female students tend to rate the home economics program more highly than do male students.
3. Students having experience in a home economics course tend to rate the senior high school home economics program more

highly than do those who have no experience whatever in the area.

4. Modern living is regarded as lowest in status, clothing and textiles next, and food science highest by all groups.
5. All groups possessed the least information about modern living.
6. Least is known by all groups tested about the content and quality of senior high school home economics programs.

Implications and Recommendations

The results of this study indicate implications for home economics curriculum development, for teachers in the field, and for public relations in communicating accurate information about home economics to others. Attitudes may assist or hinder the functioning of the home economics program within the senior high schools and the learning which occurs in it. Concerned individuals, therefore, should give consideration to a study of this problem.

Implications for Public Relations

The fact that the home economics programs were generally viewed favorably by all groups is encouraging to members of the field. This makes the task of presenting accurate information regarding the programs to the various groups easier than it would be if they possessed a completely negative attitude.

Teachers and principals already seem to hold home economics in fairly high regard; therefore, home economics programs would benefit most by an attempt to develop a more favorable attitude in counselors and students. Since counselors usually work closely with students in program and schedule planning as well as presenting information regarding careers and post secondary education entrance requirements, they should possess sufficient information regarding the home economics program to present it accurately to students. A positive program should be developed in which counselors are continuously kept informed of the objectives, content, and benefits of the home economics program. The communications could be organised at the university level, through the Home Economics Specialist Council of the Alberta Teachers' Association, or through the Home Economics Supervisors at the provincial or school board level. Although principals exhibited a fairly positive attitude toward the senior high school home economics program, they might also be included in the communication to ensure they remain up-to-date.

Students indicated the most need regarding accurate information about the home economics program, especially in clothing and textiles and modern living. One possibility, already mentioned, is to inform counselors so that they may accurately present course offerings to students. Home economics teachers can aid in informing students by making sure that home economics is included in their school's presentation of course offerings, career opportunities, open house displays, or whatever other activity their particular school chooses to conduct. They can help organize and examine such presentations so that home economics is accurately represented. An ideal time to convey information about the program would be when junior high school students are preparing for senior high school enrolments and are seeking information about various course offerings. This would imply, as well, that the junior high home economics teacher should be knowledgeable about senior high programs in the area.

Modern living showed the greatest lack of knowledge for all groups. This is to be expected since it is a relatively new course in the schools with not all schools offering it. If this course is to survive and achieve the broad home economics objectives, steps must be taken to develop a more favorable attitude toward it in all groups. This presents a problem since home economics teachers themselves indicated a lower attitude toward modern living than toward clothing and textiles and food science. Unless the teachers perceive modern living favorably, others cannot be expected to do so. As teachers develop more confidence in the field through more in-service programs, university courses, and experience in the course, their perceptions may improve. This and a special effort to disseminate information about the modern living program to principals, counselors, and especially students may help to improve the status of the program.

The study indicated that there is still some feeling that the program is more suitable for females, especially clothing and textiles and modern living, and also for the less academically inclined student. This and the fact that matriculation courses are considered more important by students and counselors tends to lower the status of home economics subjects. Means should be investigated by which these false beliefs can be modified.

Course content and quality of the courses were areas in which respondents lacked the most knowledge. It is recommended that principals, counselors, and students be informed to a greater extent about the content and quality of the courses.

Implications for Home Economics Teachers

Students who were directly involved with home economics courses in the past or at present seemed to feel more favorably about the home economics program than did those who did not. This would seem to indicate that home economics teachers may be responsible for developing a favorable attitude toward the program.

Home economics teachers have limited contacts with students in the school, restricting communication with those who are enrolled in their courses. These teachers need to become more involved with the general school functioning and with students not enrolled in a home economics course. Through such contacts, students may develop a more favorable attitude toward the program and form a more accurate basis for selecting or not selecting home economics courses as part of their program.

As indicated by their training and attitudes, home economics teachers in Edmonton's senior high schools seem to exhibit a high degree of professionalism. This is an asset in communicating the value of the program to others. Teachers should ensure their professionalism by keeping up-to-date through in-service and additional university or extension courses.

Teachers must take a more active part in promoting their discipline. This study has shown that no group is as knowledgeable about the program as are the teachers; therefore, they would be the best ones to convey information concerning the home economics program. Home economics instructors, as well, should evaluate their teaching practices to assure that the quality and content of the particular courses they teach are the best that can possibly be offered.

Implications for Curriculum Development

Responses to the opinionnaire indicate weaknesses in the home economics program.

The curriculum should be reviewed with respect to sex orientation, especially clothing and textiles and modern living. If these subjects are to be more applicable to boys, then perhaps some changes may be required. More research, however, would be required to determine the relation between curriculum and actual practice of the subjects in the school.

The home economics subjects are held to be of lesser importance than matriculation subjects. This may be due not only to the type of subject matter offered in the courses but also to the fact that only certain faculties at the university levels recognize clothing and textiles and food science as acceptable for entrance requirements. Modern living, because it has not been fully tested, does not receive this recognition.

Curriculum developers could determine why the subjects are not acceptable in all faculties, if changes could be introduced to make the courses more acceptable, and restructure the program to meet university requirements. This would allow more interested matriculation students to select home economics courses as part of their program who would otherwise be restricted from electing them because of present course requirements.

Suggestions for Further Research

1. This study could be replicated on a broader basis throughout Alberta. Inclusion of towns and rural areas may yield results different from what was obtained in this study.

2. All groups sampled were directly related to the high school setting. Other groups not in the schools but who might be concerned with course offerings in public education might also be tested in respect to their attitudes toward the home economics program. This could be done with parents, employers, or people in various endeavors related to home economics training.
3. Attitudes toward the home economics program could be determined by other means and results compared with the results of this study. A different scale could be structured (e.g. Thurstone scale or open-ended questionnaire) or interview method employed.
4. A program for improving attitudes toward the home economics program could be developed on an experimental basis with assessment of the attitude before and after implementation of the program. The experiment could be conducted with any or all of the groups in this study.
5. A study could be conducted to determine how accurately the attitudes reflect actual practices in home economics in the schools. This could form the basis for recommending changes in school programs to meet the objectives of home economics and to be of greater use to the student.
6. This study was limited to attitudes toward home economics at the senior high school level. A similar study could be conducted at the junior high school level.
7. Attitudes are not stationary but change over time. To determine the attitude toward the home economics program in the future, the study must be repeated. The results of this study must not be accepted as being indicative of attitudes existing even within a few years time.

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APPENDIX A

OPINIONNAIRES

INSTRUCTIONS

Home economics at the senior high school level is comprised of three separate courses: Food Science, Clothing and Textiles, and Modern Living. This questionnaire consists of a number of statements designed to find out how you feel about these courses whether or not you have chosen to take any of them. Even if you have not elected to take any of these courses, you have probably formulated some opinion about them. Consider your responses carefully since it is important that this should be an accurate measure of opinions.

There are two parts to the questionnaire. Place answers on the separate answer sheet by making a mark between the two guide lines. Be sure to use an HB pencil. Work quickly and be sure to place an answer for all statements.

For Part 1, mark your feeling toward each item according to the key given below:

If you strongly disagree with the statement, blacken space number 1.	A 1 ■	B 2	C 3	D 4	E 5
If you mildly or somewhat disagree with the statement, blacken space number 2.	A 1	B 2 ■	C 3	D 4	E 5
If you mildly or somewhat agree with the statement, blacken space number 3.	A 1	B 2	C 3 ■	D 4	E 5
If you strongly agree with the statement, blacken space number 4.	A 1	B 2	C 3	D 4 ■	E 5
If you feel you do not have sufficient information to answer the question, blacken space number 5.	A 1	B 2	C 3	D 4	E 5 ■

Indicate YOUR feeling in relation to each statement. Try to avoid category number 5 unless you are absolutely sure that you do not possess any information whatever to form an opinion about the statement.

Do not make any marks on the questionnaire sheets and do not bend, fold, or in any way mutilate the answer sheet. When finished with Part 1, preceed to Part 2.

OPINIONNAIRE

Responses: 1.--Strongly disagree
2.--Disagree
3.--Agree
4.--Strongly agree
5.--Insufficient information

---

1. Either matriculation or diploma students would find the clothing and textiles course worthwhile to take.
2. Modern living should be given equal credit and status with matriculation subjects.
3. Money spent on modern living by school boards would be better spent on other high school courses.
4. Boys would find the modern living course of little use to them.
5. Both boys and girls could profit from taking clothing and textiles.
6. The importance of the food science course justifies the cost of facilities and equipment.
7. Teachers should have special training in order to teach clothing and textiles.
8. Food science is more important for students who are on the diploma program rather than those who are on the matriculation program.
9. Food science teaches not only skills but also provides knowledge about nutrition and the consumer food market.
10. The modern living course is too easy and presents no intellectual challenge to the student.
11. Clothing and textiles offers a challenge in the study of theory and problem solving dealing with clothing and textiles.
12. Both boys and girls can benefit from the food science course.
13. The modern living course should remain as an option without being acceptable for university entrance.
14. Food science is an unnecessary school cost.
15. As long as the student learns to sew, he/she has to do little independent thinking in the clothing and textiles course.

1.--Strongly disagree
2.--Disagree
3.--Agree
4.--Strongly Agree
5.--Insufficient information

---

30. Clothing and textiles has less important information than courses such as English, math, science, and social studies.

31. There is too much time spent on making clothes leaving little time for studying advanced theory concerning clothing and textiles.

32. Any teacher who knows who to sew would be able to teach clothing and textiles acceptably, regardless of formal training in the area.

33. Most of the course content in the modern living course should be acquired by the student outside of school.

34. A teacher really has to be specially trained to teach the food science course.

35. Clothing and textiles should receive as much credit toward graduation as other matriculation courses.

36. The benefits offered by the modern living course make it worth the money school boards spend on it.

37. The modern living course challenges the student to develop problem-solving ability in areas of family life, housing, and management.

38. The modern living course is more important for students who receive low marks rather than those who receive high marks in their courses.

39. Food science should be given time and credit equal to other matriculation subjects in working toward graduation.

40. Food science requires less in-depth thinking than other matriculation subjects.

41. The main emphasis in food science is the cooking of food.

42. Any teacher, regardless of training could teach the modern living course well.

Turn the page and proceed with Part 2.

1.--Strongly disagree
2.--Disagree
3.--Agree
4.--Strongly agree
5.--Insufficient information

---

16. All interested students, whether they achieve high marks or low marks in their courses, should be encouraged to take modern living.

17. In order to teach the modern living course, the teacher needs special training.

18. The benefits offered to the students are worth the cost of equipment and maintenence of clothing and textiles facilities.

19. Fairly difficult theory as well as sewing skills are taught in the clothing and textiles course.

20. Both matriculation and diploma students can benefit from the food science course.

21. The modern living course offers knowledge and problem-solving skills important to both boys and girls.

22. Clothing and textiles is more important for students who are on the diploma program rather than those who are on the matriculation program.

23. English, math, science, social studies, and other matriculation subjects offer more important information than does food science.

24. Boys would find little subject matter of relevance to them in the clothing and textiles course.

25. Modern living prepares the student to deal with proglems in the areas of family and personal life, management, and housing.

26. Food science involves the student in fairly difficult theory and problem solving in the areas of food and nutrition.

27. Boys would find little of benefit to them in the food science course.

28. A teacher from any subject area could teach food science acceptably.

29. High school clothing and textiles is too specialized a course to be worth the money spent on equipment and maintenance for it by school boards.

PART 2

Indicate your answer to each question by blackening the appropriate space on Part 2 at the bottom of the separate answer sheet.

1. What is the size of your high school?

   1. Less than 100 pupils
   2. 100 - 499 pupils
   3. 500 - 1499 pupils
   4. over 1500 pupils

2. In what high school program are you presently enrolled?

   1. Matriculation program
   2. Diploma program
   3. Other

3. Sex

   1. Male
   2. Female

4. In relation to the food science courses, mark the appropriate number as it applies to you:

   1. Have never taken and do not intend to take
   2. Am taking this year
   3. Am planning to take in a future year
   4. Have taken in previous year but not this year

5. In relation to the clothing and textiles courses, mark the appropriate number as it applies to you:

   1. Have never taken and do not intend to take
   2. Am taking this year
   3. Am planning to take in a future year
   4. Have taken in previous year but not this year

6. In relation to the modern living courses, mark the appropriate number as it applies to you:

   1. Have never taken and do not intend to take
   2. Am taking this year
   3. Am planning to take in a future year
   4. Have taken in previous year but not this year

7. Did you at any time take home economics in junior high school?

   1. Yes
   2. No

GO TO NEXT PAGE

8. Did you at any time take industrial arts in junior high school?

    1. Yes
    2. No

9. Were you aware that in certain faculties, food science 30 is acceptable for university entrance?

    1. Yes
    2. No

10. Were you aware that in certain faculties, clothing and textiles 30 is acceptable for university entrance.

    1. Yes
    2. No

If you are not taking or are not planning to take food science or clothing and textiles, stop here and hand in both the questionnaire and answer sheet.

If presently enrolled in or planning to enrol in one of the above subjects, go on to the next page and complete questions 11 and 12.

11. If you are taking or planning to take food science in the future, is it with the intention of using it for university entrance?

    1. Yes
    2. No
    3. Not involved with this course

12. If you are taking or planning to take clothing and textiles in the future, is it with the intention of using it for university entrance?

    1. Yes
    2. No
    3. Not involved with this course

Upon completion of this questionnaire, hand both questionnaire and answer sheet in to the supervisor.

Thank you very much for your cooperation in answering this questionnaire.

Instructions Accompanying Principals' and Counselors' Questionnaire

INSTRUCTIONS

Home economics at the senior high school level is comprised of three separate courses: Food Science, Clothing and Textiles, and Modern Living. The purpose of this questionnaire is to determine your opinion of these courses and their content, whether or not they are offered in your school. Consider your responses carefully since an accurate measure of opinions is vital to the success of this study. The answers will be kept confidential and appear only as group results.

Place all answers on the separate answer sheet by making a mark between the two guide lines. Be sure to use an HB pencil and place an answer for all statements.

There are two parts to the questionnaire. For Part 1, mark your feeling toward each item according to the key given below:

	A 1	B 2	C 3	D 4	E 5
If you strongly disagree with statement, blacken space number 1.	■				
If you mildly or somewhat disagree with the statement, blacken space number 2.		■			
If you mildly or somewhat agree with the statement, blacken space number 3.			■		
If you strongly agree with the statement, blacken space number 4.				■	
If you feel you do not have sufficient information to answer the question, blacken space number 5.					■

Indicate YOUR reaction to each statement. Try to avoid category number 5, unless you are absolutely sure that you do not possess any information whatever to form an opinion about the statement.

Do not bend, fold, or in any way mutilate the answer sheet. When completed, enclose the opinionnaire and answer sheet in the stamped, addressed envelope and mail it at your earliest convenience.

Part 2 of Principals' and Counselors' Questionnaire

PART 2

Indicate your answer to each question by blackening the appropriate space on Part 2, at the bottom of the separate answer sheet.

1. What is your present school position?
    1. Principal
    2. Vice-principal supervising home economics subjects
    3. Counselor

2. What is the size of your school?
    1. Less than 100 pupils
    2. 100-499 pupils
    3. 500-1499 pupils
    4. Over 1500 pupils

3. Does your school include more than just senior high school students? (e.g. junior high or special students?)
    1. Yes
    2. No

4. Number of years as principal/vice-principal/counselor.
    1. Less than three
    2. three - five
    3. Six - ten
    4. More than ten

5. Does your school presently offer food science?
    1. Yes
    2. No

6. Does your school presently offer clothing and textiles?
    1. Yes
    2. No.

7. Does your school presently offer modern living?
    1. Yes
    2. No

8. Has your school ever offered a home economics course which has been discontinued while you were employed at this school?
    1. Yes
    2. No

9. Are adequate home economics facilities available in your school?
   1. Yes
   2. No

10. Is time-tabling a difficulty in arranging for a home economics program in your school?
    1. Yes
    2. No

11. Is financing a home economics program a problem in your school?
    1. Yes
    2. No

12. Does your school offer home economics courses as part of vocational education or special education?
    1. Yes
    2. No

13. Have you or do you ever advise students to take either clothing and textiles or food science 10, 20, and 30 for a matriculation requirement for university admission.
    1. Yes
    2. No

- -

Thank you for your cooperation in completing this opinionnaire. Results will be available at a future date from your school board head office. Once again, if you would like a summary of the results sent to you personally, please complete the form at the bottom of the cover letter.

Joyce Plican

Instructions Accompanying Teachers' Questionnaire

INSTRUCTIONS

Home economics at the senior high school level is comprised of three separate courses: Food Science, Clothing and Textiles, and Modern Living. The purpose of this questionnaire is to determine your opinion of these courses and their content, whether or not you teach all three. Consider your responses carefully since an accurate measure of opinions is vital to the success of this study. The answers will be kept confidential and appear only as group results.

Place all answers on the separate answer sheet by making a mark between the two guide lines. Be sure to use an HB pencil and place an answer for all statements.

There are two parts to the questionnaire. For Part 1, mark your feeling toward each item according to the key given below:

	A 1	B 2	C 3	D 4	E 5
If you strongly disagree with statement, blacken space number 1.	■				
If you mildly or somewhat disagree with the statement, blacken space number 2.		■			
If you mildly or somewhat agree with the statement, blacken space number 3.			■		
If you strongly agree with the statement, blacken space number 4.				■	
If you feel you do not have sufficient information to answer the question, blacken space number 5.					■

Indicate YOUR reaction to each statement. Try to avoid category 5, unless you are absolutely sure that you do not possess any information whatever to form an opinion about the statement.

Do not bend, fold, or in any way mutilate the answer sheet. When completed, enclose the opinionnaire and answer sheet in the stamped, addressed envelope and mail it at your earliest convenience.

Part 2 of Teachers' Questionnaire

PART 2

Indicate your answer to each question by blackening the appropriate space on Part 2, at the bottom of the separate answer sheet.

1. What is the size of your school?
    1. Less than 100 pupils
    2. 100-499 pupils
    3. 500-1499 pupils
    4. Over 1500 pupils

2. Does your school include more than just senior high school students? (e.g. junior high or special students?)
    1. Yes
    2. No

3. Are adequate home economics facilities available in your school?
    1. Yes
    2. No

4. Is time-tabling a difficulty in arranging for a home economics program?
    1. Yes
    2. No

5. Is financing a home economics program a problem in your school?
    1. Yes
    2. No

6. How many years of university training have you received?
    1. Less than 3 years
    2. Three years
    3. Four years
    4. Five years
    5. More than five years

7. What type of training did you receive?
    1. Bachelor of Science with home economics major
    2. Bachelor of Education with home economics major
    3. Both 1 and 2
    4. Other

8. What is your number of years of teaching experience?
    1. Less than two years
    2. Two - five years
    3. Six - ten years
    4. More than ten years

9. How many years have you been teaching home economics?
    1. Less than two years
    2. Two - five years
    3. Six - ten years
    4. More than ten years

10. What part of your time do you spend teaching in home economics?
    1. Half time or less
    2. One half to three-quarters time
    3. More than three-quarters time
    4. Full time

11. Do you presently teach clothing and textiles?
    1. Yes
    2. No

12. Do you presently teach food science?
    1. Yes
    2. No

13. Do you presently teach modern living?
    1. Yes
    2. No

14. Are you involved in home economics programs in vocational or special education?
    1. Vocational
    2. Special
    3. Both
    4. Neither

- -

Thank you for your cooperation in completing this opinionnaire. Results will be available at a future date from your school board head office. Once again, if you would like a summary of the results sent to you personally, please complete the form at the bottom of the cover letter.

Joyce Plican

APPENDIX B

CORRESPONDENCE

Sample Letter Sent to Principals, Counselors, and Teachers With the Opinionnaire

7512 - 148 Avenue
Edmonton, Alberta
January 30, 1975

Dear

In 1972, the home economics curriculum was revised and at the senior high school level, Food and Nutrition and Fabrics and Dress were changed to Food Science and Clothing and Textiles. Modern Living was the name given the third home economics course.

As part of a master's thesis at the University of Alberta, Principals, Counsellors, Teachers, and Students in Edmonton schools are being asked to give their opinions of these courses, even though they may have no direct involvement with the courses. This is merely a survey of opinions, the data for which is to be collected through the enclosed opinionnaire. Although you already have much work in relation to your job, your assistance in completing this opinionnaire would be greatly appreciated. If possible, would you complete and return the opinionnaire by February 15, 1975.

Your cooperation in this research project will be a valuable contribution to our subject area.

Sincerely,

Ms. Joyce Plican
Graduate Student
Secondary Education
University of Alberta

Dr. Edith Down
Coordinator
Home Economics Education
University of Alberta

- -

If you are interested in receiving a copy of the results of this study, please complete and detach this portion of the letter. Enclose it with the opinionnaire or under separate cover to the address on the envelope enclosed.

NAME: ____________________ ADDRESS: ____________________
____

Reminder Letter Sent to Principals, Counselors, and Teachers

February 19, 1975

Dear Educator:

Recently an opinionnaire was sent to Edmonton principals, counselors, and teachers in an attempt to assess perceptions of home economics sources at the senior high school level. The results of this study are important for making recommendations in this field and will be more valid if everyone replies. As yet, not all of the opinionnaires have been received.

If you have not yet completed the opinionnaire, would you please do so at your earliest convenience. If you have already completed and mailed it, please disregard this letter and thank you for your help.

Yours truly,

Joyce A. Plican
Graduate Student

Dr. Edith Down
Coordinator of Home Economics

P. S. If you have not received an opinionnaire or it has been misplaced, I would be happy to send you one along with a stamped, addressed envelope. Please send your request to:

Ms Joyce A. Plican
7512 - 148 Avenue
Edmonton, Alberta

APPENDIX C

RESPONSES OF SUBJECTS

RESPONSES OF PRINCIPALS ON CLOTHING AND TEXTILES SUBTEST

	QUESTION NUMBERS												
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
163	3	2	3	5	2	2	5	5	2	5	5	2	2	3
164	4	4	4	3	2	3	3	2	1	2	2	5	1	5
165	3	5	4	3	2	3	3	2	2	2	2	5	2	3
166	4	3	4	4	1	4	4	1	1	1	1	1	1	4
167	4	3	4	4	1	4	3	3	2	1	1	1	1	4
168	4	3	4	4	1	4	3	1	2	1	1	1	1	4
169	4	2	4	3	1	3	3	1	3	2	3	2	2	2
170	4	2	4	4	2	4	3	4	2	1	1	2	1	2
171	3	3	3	3	2	3	3	2	2	2	2	2	2	3
172	3	1	4	3	2	3	3	2	3	1	1	2	1	3
173	4	2	4	4	1	4	4	3	2	1	2	1	1	4
174	4	3	4	3	2	3	5	2	2	2	2	5	2	3
175	4	2	3	3	2	3	2	3	2	2	2	2	3	4
176	4	3	3	3	2	4	3	2	3	1	2	2	5	5
177	4	4	4	3	1	1	2	1	2	1	1	3	1	4
178	4	3	4	3	1	3	2	1	2	2	3	3	2	1

RESPONSES OF PRINCIPALS ON FOOD SCIENCE SUBTEST

	QUESTION NUMBERS												
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
163	2	2	3	5	5	3	5	2	2	2	3	3	3	3
164	4	2	4	4	2	3	2	3	2	1	3	3	2	2
165	3	2	4	3	2	3	5	5	2	2	3	3	5	5
166	4	1	4	4	1	4	1	3	1	1	4	4	2	1
167	4	3	4	3	1	4	1	3	2	1	4	4	2	2
168	4	1	4	3	1	3	4	3	2	1	3	4	2	2
169	4	1	4	3	1	3	1	3	2	1	4	3	2	2
170	4	3	4	3	1	3	2	4	2	1	4	2	2	2
171	3	2	3	3	2	3	2	3	2	2	3	3	2	5
172	4	1	4	4	1	4	1	3	1	1	3	3	2	2
173	4	3	4	4	1	4	2	4	1	1	4	4	1	4
174	4	1	3	4	2	3	2	5	1	2	3	3	3	2
175	3	2	3	4	1	4	2	2	2	2	3	4	2	2
176	4	2	4	3	1	4	1	3	2	1	3	5	5	2
177	1	1	3	4	2	4	1	3	1	1	4	4	2	3
178	3	1	4	4	1	4	2	2	1	1	3	2	3	2

RESPONSES OF PRINCIPALS IN MODERN LIVING SUBTEST

	QUESTION NUMBERS												
I. D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
163	2	5	5	5	3	3	3	2	2	5	2	5	2	2
164	5	2	2	2	2	3	3	3	3	2	3	3	2	2
165	4	2	2	5	3	5	3	5	3	2	5	5	2	2
166	4	2	1	1	3	4	4	4	4	3	4	4	2	1
167	4	1	2	1	1	2	4	4	4	1	4	4	2	1
168	4	1	2	1	1	4	4	4	3	1	4	4	1	1
169	2	3	3	5	4	1	5	3	2	3	5	2	2	2
170	2	2	2	1	4	1	4	4	3	1	4	4	4	1
171	3	2	2	2	3	3	3	3	3	2	3	3	2	2
172	2	2	2	2	3	3	3	3	3	2	5	3	3	2
173	4	1	4	1	3	3	4	4	4	1	4	4	3	1
174	2	1	1	1	2	2	2	2	2	1	3	3	2	2
175	4	1	2	2	3	3	3	3	3	3	4	3	2	2
176	2	1	2	5	3	2	3	3	3	2	1	3	1	2
177	4	1	1	2	2	4	4	4	4	2	4	3	1	1
178	2	1	1	2	3	3	4	4	3	2	3	3	2	2

RESPONSES OF COUNSELORS ON CLOTHING AND TEXTILES SUBTEST

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
179	4	2	4	5	2	4	5	2	3	1	2	5	1	4
180	3	3	3	2	2	3	2	2	2	2	2	2	2	2
181	3	3	4	5	2	3	5	2	5	1	2	5	2	2
182	4	3	4	3	4	4	3	2	2	2	2	3	2	4
183	4	3	4	3	2	3	3	2	3	2	3	5	2	3
184	3	2	4	5	5	5	5	2	3	5	3	5	1	3
185	4	3	4	3	1	3	2	2	2	2	2	2	1	4
186	4	3	4	3	2	4	3	1	2	1	1	2	1	3
187	3	2	3	2	3	2	2	2	2	2	4	5	2	3
188	4	2	4	4	2	4	2	1	3	2	2	2	2	3
189	4	3	3	3	2	3	3	2	2	2	2	2	2	2
190	4	3	3	3	2	5	3	2	2	5	5	5	2	5
191	4	4	4	3	3	4	1	2	2	2	2	2	2	4
192	4	3	4	5	2	3	5	1	2	1	2	2	2	3
193	3	3	3	3	2	3	5	2	2	2	2	2	2	2
194	3	2	3	3	2	3	2	2	3	2	2	2	1	3
195	3	2	4	4	1	4	4	2	2	1	1	5	1	4
196	3	2	4	4	2	4	3	2	2	1	2	3	1	4
197	3	2	3	3	2	3	5	2	3	2	3	5	2	2
198	3	3	4	3	2	3	3	2	2	1	3	2	1	3
199	3	3	4	5	2	3	5	2	5	2	2	5	4	3
200	3	2	4	3	2	3	3	3	3	2	3	5	1	2
201	4	3	3	3	2	3	3	2	3	2	3	2	5	2
202	1	3	3	2	2	3	3	2	3	1	2	5	2	2
203	4	2	4	5	5	5	5	1	3	5	5	5	2	2
204	3	2	4	5	2	2	3	3	2	3	4	5	2	1
205	3	2	4	3	3	3	3	3	3	2	5	2	2	2
206	3	3	4	1	2	3	2	3	3	2	3	2	2	2
207	3	2	4	5	2	3	5	2	2	2	2	2	2	3
208	4	4	4	4	1	4	2	1	2	1	1	1	3	4
209	4	3	4	3	4	3	3	1	2	1	1	2	1	3
210	4	3	4	4	1	3	3	2	2	5	2	5	2	3
211	4	3	4	3	2	3	4	2	2	2	2	2	2	3

RESPONSES OF COUNSELORS ON CLOTHING AND TEXTILES SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
212	3	3	4	3	2	3	3	2	2	2	2	5	2	3
213	3	3	4	5	1	3	3	2	2	2	3	5	2	2
214	4	4	4	4	1	4	5	1	1	1	1	1	1	3
215	4	4	4	2	3	4	4	2	3	1	2	2	1	2

RESPONSES OF COUNSELORS ON FOOD SCIENCE SUBTEST

	QUESTION NUMBERS												
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
179	4	2	4	4	1	4	2	5	1	1	4	4	5	3
180	3	2	3	3	2	3	2	2	2	2	3	3	3	3
181	4	2	3	4	1	4	2	5	1	1	4	2	3	5
182	3	2	3	4	2	4	2	3	2	1	3	4	1	2
183	3	2	3	3	2	3	3	3	2	2	3	3	3	5
184	5	2	3	3	2	3	3	5	2	4	4	3	3	3
185	3	3	4	3	1	4	2	3	2	1	3	4	2	2
186	3	1	3	4	1	3	1	3	2	1	3	3	1	2
187	3	2	2	3	4	4	4	2	3	2	3	1	4	5
188	3	2	4	3	1	3	1	3	2	1	3	4	2	2
189	3	2	3	3	2	3	2	3	2	2	3	3	2	2
190	5	2	5	3	2	3	5	3	2	2	3	5	5	5
191	4	2	4	3	1	4	2	2	1	1	4	3	3	2
192	3	1	3	4	1	4	2	5	1	1	3	3	3	2
193	3	2	3	3	2	3	2	3	2	2	3	2	2	2
194	4	2	4	3	2	3	2	3	2	1	3	3	5	2
195	3	2	4	4	1	4	1	3	1	1	4	4	1	1
196	4	3	4	4	2	4	2	2	1	4	4	4	4	2
197	3	2	3	3	2	3	3	3	2	2	3	2	3	5
198	4	2	2	4	1	3	3	3	2	1	3	3	2	1
199	3	2	3	3	2	3	2	5	2	1	4	3	3	5
200	3	3	4	3	2	3	3	3	2	1	3	2	3	5
201	3	2	4	3	2	3	3	3	2	2	3	2	4	2
202	3	1	3	3	2	4	2	2	1	2	3	3	2	5
203	4	1	4	4	1	4	1	4	1	1	4	4	3	2
204	2	3	3	3	2	3	3	2	2	1	3	1	3	2
205	3	2	3	3	2	3	3	2	2	2	3	2	3	5
206	4	2	5	3	2	3	3	2	2	2	2	2	3	2
207	5	2	3	4	2	3	2	3	2	1	3	3	3	1
208	4	1	4	4	1	4	1	2	1	1	2	4	3	3
209	4	1	3	4	4	4	1	5	1	1	4	3	2	2
210	4	1	4	4	1	3	2	3	2	2	3	3	2	2
211	3	2	3	3	2	3	2	3	2	2	3	1	2	2

RESPONSES OF COUNSELORS ON FOOD SCIENCE SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
212	3	2	3	3	2	3	2	3	2	1	3	3	2	2
213	3	1	4	1	1	4	3	3	2	2	3	2	3	2
214	4	1	4	4	1	4	1	5	1	1	4	4	1	1
215	4	2	3	4	1	4	2	3	1	1	2	2	4	2

RESPONSES OF COUNSELORS ON MODERN LIVING SUBTEST

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
179	3	1	1	2	2	4	4	4	4	1	4	4	1	1
180	2	2	2	3	3	2	3	2	3	2	2	2	3	2
181	2	1	2	5	3	3	3	3	3	2	4	3	2	1
182	3	1	2	2	2	3	3	3	3	3	3	3	1	1
183	3	2	2	2	2	3	3	3	3	3	3	3	2	2
184	3	2	2	2	4	3	4	3	3	2	3	3	2	1
185	3	1	1	2	4	4	4	4	3	2	4	3	1	1
186	1	1	1	2	3	3	5	3	3	3	3	5	2	2
187	1	4	3	4	4	1	1	2	1	4	1	1	4	2
188	3	2	2	2	2	4	4	4	4	2	4	4	1	1
189	3	1	2	2	2	3	3	3	3	2	3	3	2	2
190	3	2	2	5	5	3	3	3	3	2	5	3	2	5
191	3	1	4	1	4	2	4	3	3	2	3	3	2	1
192	2	2	1	2	3	3	3	3	3	2	3	5	1	1
193	3	2	2	5	3	3	3	3	3	2	3	3	2	2
194	2	2	2	5	3	2	3	2	2	3	5	5	1	1
195	2	2	2	1	2	3	4	4	4	2	4	4	1	1
196	1	2	2	2	3	3	4	2	4	4	3	4	4	3
197	2	2	2	2	3	3	3	3	3	5	3	5	2	2
198	5	2	2	5	3	3	3	3	3	3	3	3	2	1
199	3	2	2	5	3	3	4	3	3	2	3	5	2	1
200	2	2	2	2	3	3	4	3	4	3	3	3	2	1
201	5	5	5	5	5	5	5	5	5	5	5	5	5	5
202	3	2	3	2	4	1	3	2	3	2	3	3	2	2
203	2	5	2	3	4	4	1	3	3	2	5	3	2	4
204	2	3	3	3	4	3	3	3	3	3	1	3	2	1
205	2	2	2	3	3	2	4	3	3	2	3	2	5	2
206	1	2	2	4	4	3	3	2	2	3	2	2	2	2
207	2	3	3	2	3	2	4	5	2	5	5	3	1	1
208	4	1	1	5	2	4	2	4	4	1	4	4	2	3
209	3	2	2	2	3	3	4	3	3	2	3	3	2	1
210	5	5	2	5	3	4	5	5	3	3	3	3	2	1
211	2	5	2	2	2	3	2	3	3	2	5	3	5	3

RESPONSES OF COUNSELORS ON MODERN LIVING SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I. D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
212	3	2	2	2	2	3	3	3	3	2	3	3	2	2
213	2	2	2	5	3	4	3	3	3	2	3	3	2	2
214	4	5	1	1	1	4	4	4	4	1	5	4	1	1
215	2	1	2	2	4	3	3	4	4	1	4	3	2	1

RESPONSES OF TEACHERS ON CLOTHING AND TEXTILES SUBTEST

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
216	5	3	4	5	1	4	5	1	3	1	1	5	1	5
217	3	3	3	5	5	3	5	2	2	1	2	2	1	3
218	4	3	4	3	2	3	2	1	3	1	1	2	2	3
219	3	3	4	3	1	3	3	2	2	2	2	5	1	3
220	4	3	2	3	1	3	3	2	2	1	2	2	2	3
221	2	2	4	4	1	4	4	1	3	1	5	1	1	5
222	5	2	5	3	2	3	3	2	3	2	2	2	2	3
223	4	3	3	3	1	4	4	1	3	1	1	2	2	3
224	4	3	4	4	1	4	4	1	2	1	1	4	1	4
225	3	2	3	2	2	3	3	1	2	1	2	2	2	3
226	4	3	3	4	1	4	4	2	3	2	2	2	1	3
227	4	3	3	3	2	3	3	2	2	2	2	2	2	3
228	4	4	4	3	1	4	2	1	2	1	1	2	1	4
229	4	3	4	3	1	3	3	1	2	1	2	2	1	3
230	3	3	3	5	2	3	5	2	2	2	5	5	2	3
231	4	3	4	4	1	4	4	2	2	4	4	4	4	2
232	4	3	3	3	2	3	3	2	2	1	1	2	1	4
233	4	4	3	4	1	4	2	2	4	2	3	2	2	2
234	4	4	4	1	2	4	4	1	1	1	1	1	1	4
235	4	3	4	4	1	4	4	2	1	1	1	2	1	4
236	4	3	1	4	1	4	4	1	2	1	3	1	1	4
237	3	3	4	3	2	3	3	2	2	2	2	2	2	3
238	4	4	5	5	2	5	5	2	2	5	5	5	2	5
239	4	4	4	3	3	4	3	1	1	1	1	2	1	5
240	3	3	3	3	2	4	3	1	3	2	2	2	2	3
241	3	3	3	3	5	3	3	2	5	2	2	2	2	3
242	3	3	4	3	2	3	3	2	2	2	3	2	2	3
243	4	3	4	4	1	4	2	2	1	1	3	3	1	4
244	3	3	4	3	1	3	3	2	2	1	2	1	1	2
245	4	4	3	5	1	4	5	1	1	1	1	1	2	3
246	4	3	4	3	3	4	3	2	2	1	1	2	1	1
247	3	3	3	2	2	3	2	1	2	2	2	2	2	4
248	4	3	4	4	1	4	4	1	2	1	2	3	1	3
249	4	3	4	4	1	4	4	1	3	1	2	1	1	4

RESPONSES OF TEACHERS ON MODERN LIVING SUBTEST

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
216	3	1	2	1	2	4	4	4	4	1	4	4	1	1
217	4	1	1	5	2	4	3	4	3	2	3	3	2	2
218	3	1	2	1	3	3	3	3	4	2	4	4	1	2
219	3	2	2	2	2	2	3	3	4	2	3	4	3	2
220	3	5	2	2	3	3	3	5	3	2	5	5	2	2
221	4	5	3	2	4	4	1	4	1	5	5	5	1	1
222	2	2	2	3	3	3	3	3	3	3	2	3	2	3
223	3	2	1	1	2	4	4	4	3	4	3	3	1	1
224	3	1	1	1	2	3	3	4	4	1	4	4	1	1
225	4	1	1	1	2	3	5	4	4	2	4	4	1	2
226	3	1	1	1	2	3	4	3	4	2	3	3	3	5
227	3	2	2	2	2	2	3	3	3	2	3	3	2	2
228	4	1	1	1	1	4	3	4	3	1	4	3	2	1
229	2	3	2	2	3	2	3	3	3	4	5	2	2	2
230	5	5	5	5	5	5	3	5	5	5	3	5	2	2
231	4	1	1	1	3	4	4	4	4	3	4	4	2	4
232	4	1	2	1	1	5	3	3	3	2	4	4	1	2
233	2	1	1	4	3	4	3	4	4	2	4	3	2	1
234	3	1	1	1	5	3	4	4	4	1	4	4	1	1
235	4	1	1	1	2	4	4	4	4	1	4	4	3	1
236	1	1	3	1	2	3	4	3	4	2	4	3	2	1
237	3	2	2	2	2	3	3	3	3	2	3	3	2	2
238	4	1	1	1	1	4	4	4	4	5	4	4	1	1
239	5	2	2	2	2	3	3	3	3	1	3	3	2	1
240	2	2	4	2	3	2	2	3	3	2	3	3	2	2
241	3	2	2	2	2	3	3	3	3	2	3	3	2	2
242	3	2	2	5	2	2	3	3	3	2	3	3	2	2
243	4	1	1	3	3	4	4	4	4	1	2	3	1	1
244	4	4	2	2	3	2	4	3	3	3	2	3	2	1
245	2	1	1	1	3	3	2	4	3	4	4	4	1	2
246	4	1	2	2	3	4	4	3	4	2	2	2	2	2
247	3	2	2	2	2	2	4	3	3	2	3	3	2	2
248	3	2	1	1	5	3	4	4	4	5	4	4	1	3
249	3	2	4	2	2	4	4	4	4	1	4	4	2	1

RESPONSES OF TEACHERS ON FOOD SCIENCE SUBTEST

							QUESTION NUMBERS							
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
216	4	1	2	4	1	4	1	2	1	1	4	5	3	3
217	4	2	3	4	1	4	2	3	2	1	4	3	2	3
218	3	1	3	3	2	4	2	2	2	1	3	4	2	1
219	3	2	4	4	1	3	2	3	1	2	3	3	1	1
220	4	2	3	4	1	4	1	3	2	1	3	3	2	2
221	4	1	4	4	1	4	5	3	1	1	4	5	5	3
222	3	1	3	3	2	3	2	2	2	2	2	3	2	2
223	4	1	4	4	1	4	1	4	2	1	3	3	2	1
224	4	1	4	4	1	4	1	4	1	1	4	4	2	4
225	3	2	4	4	1	4	1	3	1	2	3	4	1	1
226	3	2	3	3	1	3	2	2	1	1	3	2	2	5
227	3	2	3	3	2	3	2	3	2	2	3	3	2	2
228	4	1	4	4	1	3	2	2	1	1	3	4	2	3
229	3	1	4	4	1	3	2	3	1	1	4	3	2	2
230	3	2	4	4	1	4	2	3	1	1	3	3	2	2
231	3	5	4	4	4	4	2	3	4	1	4	2	3	2
232	3	1	4	4	2	1	1	3	1	1	4	4	2	2
233	4	1	4	4	1	4	3	2	1	1	3	2	3	3
234	4	1	4	4	1	4	1	4	1	1	4	4	1	2
235	4	2	4	4	1	4	1	4	1	1	4	4	1	1
236	4	2	4	1	1	4	3	4	2	1	4	4	2	2
237	3	2	3	3	2	3	2	3	2	2	3	3	2	2
238	5	2	4	4	1	3	2	3	1	1	3	3	2	2
239	4	1	3	4	1	3	2	3	1	1	4	5	3	2
240	4	2	4	3	1	3	1	3	2	2	3	3	3	2
241	3	2	4	3	2	3	2	3	2	2	3	3	2	2
242	3	1	3	3	1	3	2	3	2	1	3	3	3	2
243	3	1	4	4	5	4	1	2	4	1	4	4	1	1
244	4	2	4	4	1	4	1	3	1	1	4	3	2	2
245	4	1	4	4	1	4	1	4	1	1	4	4	1	2
246	4	2	4	4	1	4	2	1	1	4	1	1	2	2
247	3	1	4	3	1	3	2	1	1	1	3	3	3	2
248	3	1	4	4	2	4	2	3	1	1	4	3	2	2
249	4	1	4	4	1	4	2	4	1	1	4	4	2	2

RESPONSES OF FEMALES ON CLOTHING AND TEXTILES SUBTEST

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
0071	3	4	4	4	1	4	4	3	3	1	3	1	2	4
0112	3	4	4	3	2	3	5	3	3	2	3	2	1	3
0121	3	2	4	3	2	5	3	1	3	2	2	2	2	2
0141	4	3	4	2	2	4	3	2	3	1	4	2	1	3
0151	2	2	4	3	2	3	3	1	3	3	4	3	4	1
0161	3	4	3	3	2	5	4	3	3	2	3	5	2	2
0181	3	2	4	4	4	4	4	2	3	1	2	2	1	4
0211	3	3	3	3	2	3	5	2	5	2	5	5	2	2
0221	3	4	3	2	2	3	2	2	2	2	4	3	2	3
0251	3	3	3	3	2	2	3	2	3	2	3	2	2	3
0261	4	5	3	5	2	3	5	2	3	2	3	2	1	2
0271	3	2	4	3	1	4	3	1	4	1	3	1	2	3
0291	3	3	4	3	1	3	3	3	3	4	2	2	1	3
0371	2	3	2	3	2	2	3	2	3	2	3	2	2	1
0391	3	3	3	2	2	3	3	2	3	2	2	2	2	2
0401	4	4	4	2	1	4	1	2	1	1	4	4	1	4
0441	3	3	3	3	2	3	5	2	2	2	4	5	2	3
0451	3	3	4	5	3	3	5	2	3	2	3	5	2	2
0462	3	2	4	3	2	1	4	2	3	4	4	1	2	3
0471	3	3	4	3	2	4	3	2	4	2	2	2	2	3
0481	1	1	1	2	4	4	1	4	2	4	2	4	4	1
0491	2	1	1	2	2	3	3	2	1	2	2	1	4	1
0501	3	3	4	1	2	3	1	1	3	1	4	1	1	1
0651	3	4	4	3	1	5	3	1	1	2	1	5	2	3
0671	2	3	4	3	2	3	3	2	2	3	2	3	2	3
0681	2	3	3	3	2	3	3	2	3	2	3	2	2	2
0691	3	1	4	3	2	3	5	2	4	2	2	2	1	3
0711	3	3	3	5	1	3	5	1	2	2	2	1	1	3
0721	4	3	3	3	5	4	5	3	2	2	2	5	1	3
0741	3	4	4	3	1	3	3	1	1	1	1	2	1	4
0751	3	1	4	5	4	3	5	3	1	3	3	3	3	3
0801	3	3	4	5	5	5	5	4	3	5	2	1	1	4

RESPONSES OF FEMALES ON CLOTHING AND TEXTILES SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
0811	4	4	4	3	2	3	5	1	2	2	2	1	1	4
0821	3	3	3	5	2	3	5	2	2	2	2	2	2	3
0831	1	3	3	5	2	5	5	2	3	1	2	2	2	3
0851	2	3	3	5	2	3	5	2	2	2	3	5	2	3
0861	2	3	4	5	5	3	5	2	2	2	2	5	1	2
0871	3	3	3	3	2	3	2	1	2	2	3	3	1	2
0881	4	4	4	4	3	3	4	1	2	1	2	1	1	3
0891	3	3	3	3	1	3	5	1	2	2	3	5	2	3
0901	3	3	4	3	2	3	4	2	2	2	3	2	1	3
0911	2	2	3	5	5	3	5	5	3	2	4	5	2	3
0931	3	3	4	5	2	3	3	2	2	2	2	5	2	2
0951	5	3	3	4	5	5	5	3	3	5	3	5	5	3
0961	3	3	4	5	5	3	5	5	3	2	3	5	1	3
0971	3	3	4	3	2	3	2	1	2	2	3	5	1	3
0981	4	4	3	3	2	3	5	2	2	2	2	2	2	3
0991	5	4	4	3	2	3	5	2	2	2	2	5	1	4
1001	2	3	3	3	2	3	5	2	5	2	5	1	1	3
0941	4	2	4	3	2	3	3	2	3	2	2	2	2	3
1011	2	3	3	3	2	3	3	2	3	2	2	2	2	3
1021	3	3	4	5	5	5	5	5	5	5	5	5	2	3
1031	4	4	3	3	2	3	5	2	2	2	2	2	2	3
1041	3	2	4	3	2	4	3	2	3	2	1	1	2	4
1051	1	3	3	4	2	5	5	4	2	3	2	5	2	3
1061	2	4	4	4	1	3	3	2	1	1	2	2	1	3
1071	4	2	4	3	2	3	5	1	3	2	2	5	2	2
1091	3	4	3	3	2	4	3	2	2	2	3	1	2	2
1101	3	3	3	3	2	3	5	2	3	2	2	2	2	5
1112	2	3	3	3	2	3	5	2	3	2	4	5	3	2
1131	2	3	5	3	5	2	3	2	3	2	3	2	2	3
1161	2	3	3	5	2	3	5	2	2	5	3	3	3	5
1171	2	3	3	5	5	3	3	2	2	2	2	5	2	3
1211	3	4	4	4	1	4	4	1	2	1	1	1	1	4
1221	3	3	3	5	2	3	5	3	3	2	3	2	2	3

RESPONSES OF FEMALES ON CLOTHING AND TEXTILES SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
1231	3	3	4	3	1	5	3	3	2	2	4	3	1	3
1241	3	3	4	3	1	4	4	2	2	2	2	2	2	4
1251	3	3	4	3	2	5	3	3	3	2	2	2	1	3
1271	3	3	3	3	2	3	5	2	3	2	2	2	2	2
1291	2	2	4	3	2	3	2	3	3	2	5	2	1	3
1311	4	3	4	4	5	4	4	2	2	2	2	5	1	4
1351	2	3	4	3	1	3	5	5	2	1	2	2	2	3
1391	3	3	4	1	3	3	5	3	3	2	3	5	2	3
1401	3	2	1	3	2	3	3	2	3	2	3	2	2	2
1411	3	3	4	3	2	3	3	2	2	2	3	2	2	3
1421	2	3	4	2	2	2	2	2	2	2	2	2	2	3
1431	3	2	3	5	2	3	2	3	3	3	3	2	2	2
1441	3	3	3	2	2	3	3	2	2	2	3	3	2	3
1471	1	2	4	3	3	2	3	4	2	2	4	2	1	1
1481	3	3	3	2	2	2	3	2	3	2	3	2	2	2
1501	2	3	4	5	2	3	3	1	3	1	3	2	1	3
1511	2	4	4	5	2	3	5	3	3	2	4	5	2	2
1521	3	4	4	3	2	4	3	2	3	4	2	3	1	3
1551	3	2	4	3	2	3	4	1	4	2	4	1	1	1
1581	2	3	3	5	2	2	5	2	2	2	2	2	1	3
1591	1	4	3	5	2	1	5	4	2	5	3	3	2	3
1601	2	4	3	3	1	3	5	3	1	1	1	5	2	3
1611	3	2	4	3	1	3	3	3	3	2	4	2	2	2
1621	3	3	4	3	1	3	3	1	2	1	1	1	1	4

RESPONSES OF FEMALES ON FOOD SCIENCE SUBTEST

	QUESTION NUMBERS													
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
0071	4	2	4	3	1	4	3	4	3	4	3	3	1	2
0112	3	2	4	3	2	3	2	3	3	2	3	3	2	2
0121	3	4	5	4	1	3	2	2	2	1	3	3	3	2
0141	3	2	5	4	2	3	4	3	1	1	4	2	3	2
0151	3	2	3	3	2	2	4	2	2	4	4	2	2	2
0161	5	2	3	4	5	3	2	3	2	2	3	2	2	2
0181	4	2	4	4	4	4	1	4	1	1	4	4	5	3
0211	2	2	3	3	2	3	5	5	2	2	3	5	2	5
0221	4	1	5	4	2	4	2	5	1	1	4	3	3	2
0251	2	2	3	4	1	3	3	3	1	2	3	3	3	3
0261	3	2	3	1	1	4	2	3	1	1	4	2	3	5
0271	1	4	4	3	2	4	5	2	2	2	2	2	3	2
0291	3	2	4	4	1	3	2	4	1	1	4	3	3	2
0371	2	1	4	3	2	3	3	3	2	2	2	2	2	2
0391	3	2	3	3	2	3	2	3	2	2	3	2	3	2
0401	4	1	4	4	1	4	4	5	1	1	4	4	3	1
0441	2	2	3	1	2	3	4	2	2	2	3	3	3	3
0451	1	2	3	3	2	3	2	2	2	1	2	2	3	2
0462	1	5	4	3	3	3	4	3	1	1	3	3	3	2
0471	3	2	4	4	1	3	2	3	1	1	3	3	2	2
0481	4	4	2	1	4	1	3	2	4	4	2	3	1	2
0491	3	2	1	3	2	3	3	3	2	1	3	3	3	1
0501	3	2	5	2	1	1	4	5	1	1	4	4	3	5
0651	4	1	4	4	1	4	1	1	1	1	3	4	2	4
0671	3	2	3	3	1	3	2	3	2	1	3	3	3	3
0681	3	3	4	4	1	4	2	2	1	1	4	4	2	2
0691	4	2	4	4	2	4	2	3	1	2	4	3	2	2
0711	3	1	3	4	2	4	3	3	2	1	3	3	2	2
0721	4	2	4	4	1	4	2	5	1	2	3	3	3	5
0741	4	1	4	4	1	4	1	3	1	1	4	4	1	2
0751	4	3	2	4	1	4	3	5	4	2	3	3	2	4
0801	2	4	4	1	1	4	2	1	4	1	4	3	4	2

RESPONSES OF FEMALES ON FOOD SCIENCE SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
0811	3	3	4	4	1	4	1	5	1	1	4	4	1	3
0821	5	2	3	3	2	3	2	5	2	2	3	4	3	2
0831	3	2	5	3	2	3	5	5	1	2	3	3	2	2
0851	1	3	3	3	2	4	3	2	2	2	3	3	3	2
0861	3	2	4	3	3	3	3	5	2	1	4	2	3	5
0871	2	2	3	4	5	3	2	2	2	2	2	2	3	2
0881	3	1	3	4	1	4	2	5	1	1	4	3	1	2
0891	2	5	3	3	4	3	2	3	1	1	3	3	2	5
0901	2	3	3	3	2	3	3	3	2	1	4	3	2	2
0911	3	2	5	3	2	3	5	5	2	2	4	3	5	5
0931	3	2	3	3	2	3	2	5	2	2	3	2	2	2
0951	5	3	3	3	2	4	4	5	2	1	3	3	5	3
0961	3	3	3	3	2	3	3	3	2	1	3	3	5	5
0971	5	1	1	4	1	4	3	3	1	1	4	3	1	1
0981	2	2	4	4	1	3	2	3	2	1	3	4	1	2
0991	2	2	3	3	1	3	2	5	2	1	4	3	2	5
1001	2	2	3	4	2	3	3	5	2	1	1	3	5	5
0941	5	2	4	4	2	3	2	4	1	1	3	3	2	2
1011	3	2	3	3	2	4	2	2	2	2	3	3	2	2
1021	5	3	5	3	2	3	5	5	5	5	3	3	5	5
1031	2	2	4	4	1	3	2	3	2	1	3	4	1	2
1041	3	3	3	3	2	3	3	3	2	2	3	3	3	5
1051	2	1	4	4	1	3	3	3	4	2	2	4	3	2
1061	5	1	4	4	1	4	2	3	1	1	4	4	2	2
1071	3	2	5	4	1	2	3	4	1	4	4	4	2	3
1091	4	2	4	4	1	4	1	3	1	2	3	4	1	1
1101	4	1	3	4	1	2	2	2	1	1	3	3	2	3
1112	2	3	5	3	2	3	4	3	2	2	2	3	4	3
1121	4	4	3	3	2	2	4	5	2	1	4	2	4	5
1131	3	2	4	3	2	3	3	3	2	2	2	3	3	3
1161	5	2	3	3	2	3	4	5	3	1	2	5	5	5
1171	3	2	5	3	2	3	2	5	2	2	3	3	2	5
1211	4	1	4	4	1	4	1	4	1	1	4	4	1	3
1221	5	3	4	4	2	3	2	5	2	2	4	3	3	3

RESPONSES OF FEMALES ON FOOD SCIENCE SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I. D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
1231	2	3	3	3	2	3	3	3	1	1	4	2	2	2
1241	4	2	4	4	1	3	2	4	2	1	4	4	3	4
1251	3	2	3	3	2	3	2	3	3	2	3	3	3	3
1271	5	2	1	1	4	3	2	2	1	2	3	2	3	5
1291	3	2	4	4	1	4	5	2	1	1	4	3	3	3
1311	3	2	4	4	1	3	3	3	2	1	4	1	1	5
1351	4	5	4	4	4	3	2	5	1	1	3	3	2	1
1391	4	4	2	4	1	4	3	2	1	1	3	3	2	4
1401	3	2	4	3	2	4	2	3	2	1	3	2	2	1
1411	2	5	3	3	2	3	3	2	2	2	3	3	2	2
1421	2	1	3	3	1	3	1	2	2	2	3	3	2	2
1431	3	2	3	3	2	3	2	3	2	2	3	2	2	5
1441	3	2	3	3	2	3	3	3	2	2	3	3	3	2
1471	4	3	4	4	2	1	4	2	2	2	4	1	2	3
1481	5	5	3	3	2	3	4	3	3	2	3	2	3	2
1501	3	1	5	4	1	4	1	4	1	1	4	3	3	2
1511	3	4	3	3	5	3	4	5	2	2	4	2	3	4
1521	4	2	3	3	1	3	2	4	2	1	4	4	3	2
1551	2	2	3	4	2	4	4	1	1	1	4	4	2	1
1581	2	2	5	3	2	3	2	5	2	2	3	2	3	5
1591	3	4	4	4	2	3	2	5	2	1	4	4	2	5
1601	3	4	4	4	2	4	1	5	1	1	4	3	5	4
1611	3	2	3	4	2	4	4	3	2	1	3	3	4	2
1621	3	2	4	4	1	4	2	4	1	1	1	4	1	3

RESPONSES OF FEMALES ON MODERN LIVING SUBTEST

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
0071	5	5	5	5	5	5	5	5	5	5	5	5	5	5
0112	3	2	3	2	2	3	3	3	3	2	3	3	2	2
0121	2	3	2	1	2	3	3	3	3	2	3	3	2	1
0141	3	2	2	5	3	2	4	5	3	5	5	3	1	1
0151	3	4	3	2	2	2	4	2	3	3	3	3	2	1
0161	3	4	2	2	3	3	3	3	4	2	5	3	1	3
0181	3	2	2	2	3	3	4	3	3	2	3	3	2	2
0211	3	3	2	2	3	5	2	3	3	2	5	5	2	2
0221	2	3	2	5	3	1	4	5	3	3	3	3	1	2
0251	2	1	2	2	4	4	4	3	3	2	3	3	2	1
0261	3	1	2	2	3	3	4	3	3	2	3	5	1	1
0271	1	2	4	2	2	2	3	2	3	3	2	3	2	3
0291	2	2	2	2	2	3	3	3	3	1	3	3	2	1
0371	3	3	2	5	3	4	2	3	3	5	5	3	2	2
0391	3	2	2	2	3	3	2	3	3	3	3	3	2	2
0401	3	2	1	1	2	4	4	4	4	4	3	5	1	1
0441	2	3	1	2	2	3	3	3	3	2	3	3	1	2
0451	1	3	2	5	4	2	3	5	3	2	2	3	2	2
0462	2	5	5	5	4	2	3	5	5	5	5	5	2	3
0471	2	5	5	5	3	2	5	3	3	5	5	3	2	2
0481	3	1	4	2	1	4	3	4	1	1	3	2	4	2
0491	2	3	2	2	3	2	3	3	3	3	5	3	2	2
0501	2	2	3	1	3	1	4	5	3	4	5	3	1	1
0651	3	1	1	5	1	2	4	3	3	3	5	3	1	2
0671	3	1	2	2	3	3	2	3	3	2	3	3	2	2
0681	4	1	2	1	3	3	3	4	4	2	4	4	2	1
0691	5	2	2	2	5	3	3	3	3	5	5	3	2	2
0711	4	2	4	2	2	3	3	3	3	3	3	3	3	1
0721	3	2	3	5	3	3	2	5	3	5	5	3	2	2
0741	4	1	1	1	1	3	4	4	4	1	4	4	3	1
0751	3	1	1	3	4	3	1	4	4	1	3	3	3	1
0801	2	2	4	3	2	3	4	3	4	2	3	4	5	1

RESPONSES OF FEMALES ON MODERN LIVING SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
0811	4	3	2	1	2	2	4	4	5	2	4	4	2	1
0821	2	2	2	2	2	2	3	3	3	2	3	3	2	2
0831	4	2	2	5	1	3	3	5	5	5	5	5	2	2
0851	3	2	2	5	3	5	3	5	3	2	5	3	2	2
0861	2	2	2	5	3	2	3	5	5	2	3	5	2	5
0871	2	2	3	2	3	1	3	5	3	2	3	3	2	2
0881	4	1	2	2	3	4	4	5	4	3	5	3	1	1
0891	3	2	3	5	5	1	3	3	3	2	3	3	1	1
0901	3	2	2	2	3	3	4	4	3	2	3	3	2	1
0911	3	2	3	3	3	1	3	2	2	3	1	2	2	2
0931	1	2	2	2	3	3	3	5	3	2	3	3	2	2
0951	3	2	2	5	3	3	5	3	4	1	5	3	2	2
0961	3	3	2	5	3	2	4	3	3	2	3	3	1	1
0971	3	2	2	2	2	2	3	4	3	5	5	3	1	1
0981	3	2	1	2	2	3	3	3	3	2	3	3	2	2
0991	3	2	1	2	1	2	4	3	3	2	3	3	2	1
1001	2	2	2	2	3	5	3	3	4	5	4	4	2	2
0941	5	5	5	5	5	5	5	5	5	3	3	3	2	2
1011	1	3	2	2	3	3	3	3	3	3	3	3	2	2
1021	2	2	5	5	2	3	3	5	5	2	5	5	5	5
1031	3	2	2	2	2	3	3	3	3	2	3	3	2	2
1041	4	2	2	2	4	3	2	4	4	2	3	3	1	2
1051	3	2	1	1	4	3	3	3	4	2	5	4	2	5
1061	4	1	2	1	4	4	3	3	4	1	3	4	1	1
1071	3	2	3	5	3	3	4	3	4	3	3	3	1	4
1091	3	2	2	2	3	3	4	3	4	2	3	4	2	2
1101	3	2	2	1	2	3	3	3	3	2	3	4	1	2
1112	2	2	5	5	5	5	5	5	5	5	5	5	5	5
1121	1	3	4	5	4	5	4	3	4	5	5	4	2	1
1131	3	2	3	5	3	1	3	3	4	5	3	3	2	2
1161	3	2	2	5	5	2	5	5	3	3	5	3	2	5
1171	3	2	2	5	5	5	5	3	5	5	5	5	2	2
1211	4	1	1	1	1	3	4	4	4	1	4	4	1	1
1221	3	2	2	5	3	1	4	2	3	3	5	3	2	2

RESPONSES OF FEMALES ON MODERN LIVING SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
1231	3	2	3	2	3	1	4	3	3	1	2	3	1	1
1241	4	2	2	2	1	4	4	4	4	3	3	4	1	1
1251	2	4	3	2	3	1	3	3	3	5	3	3	2	2
1271	3	2	3	5	1	1	5	5	5	5	5	5	5	2
1291	1	4	2	4	4	1	2	2	2	4	1	2	3	3
1311	3	1	1	5	5	2	4	3	3	5	3	3	3	5
1351	2	2	2	2	3	3	4	4	3	2	3	5	1	2
1391	3	4	2	3	4	1	4	3	2	3	5	3	2	1
1401	2	2	3	1	3	2	3	2	3	2	3	3	2	2
1411	3	2	1	2	3	2	4	3	3	2	3	3	2	2
1421	3	2	2	2	2	3	3	3	3	2	3	3	2	2
1431	2	2	3	2	3	2	4	3	3	5	3	3	2	2
1441	3	3	2	3	3	3	3	3	3	2	3	3	2	2
1471	1	5	2	3	4	2	4	3	3	3	2	3	5	1
1481	2	3	3	5	3	2	3	2	3	3	2	3	2	5
1501	1	5	2	2	4	2	4	3	3	3	2	3	2	4
1511	2	2	4	5	5	3	3	5	5	5	5	5	3	1
1521	3	2	2	3	3	3	3	4	4	1	3	4	2	2
1551	3	4	4	4	4	2	4	2	2	4	1	2	1	4
1581	2	3	2	5	2	2	3	5	5	2	3	2	2	2
1591	3	3	2	3	4	2	3	3	3	5	3	4	1	1
1601	3	4	1	5	1	4	4	3	4	2	4	4	1	1
1611	2	3	2	2	4	3	3	3	3	2	3	3	2	2
1621	3	2	1	1	1	1	4	4	4	1	3	3	1	1

RESPONSES OF MALES ON CLOTHING AND TEXTILES SUBTEST

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
0011	3	3	4	5	5	3	5	3	4	5	4	5	2	3
0022	2	3	3	5	5	2	5	3	2	2	4	5	2	2
0031	3	3	3	3	2	3	5	3	1	1	3	5	1	3
0042	2	3	3	3	2	2	5	2	3	3	3	5	5	3
0052	2	3	4	3	1	2	5	3	2	3	4	5	2	2
0062	2	3	3	5	2	3	5	3	2	2	4	5	2	3
0082	2	2	5	5	5	2	5	2	3	2	4	5	2	3
0091	2	3	5	3	5	3	5	2	3	5	3	5	2	3
0102	1	3	5	5	5	5	5	2	5	5	5	5	5	2
0132	3	3	4	4	2	3	5	2	2	2	4	5	3	2
0171	4	3	3	3	2	3	2	2	3	2	2	2	2	5
0192	5	3	4	5	5	3	5	3	5	2	3	5	2	3
0232	2	3	3	5	3	2	5	3	2	3	3	5	1	2
0242	2	2	3	3	1	3	1	2	3	2	4	5	1	3
0282	5	3	3	5	5	5	5	3	5	5	5	5	2	2
0302	2	3	3	3	2	3	5	2	2	2	2	5	2	2
0312	3	3	4	3	2	3	5	3	2	2	4	2	2	3
0322	2	2	3	3	2	2	5	3	3	3	4	2	2	3
0332	1	5	3	3	5	5	5	3	3	5	5	5	5	3
0341	2	2	3	5	2	3	5	2	4	2	2	5	4	2
0352	3	2	3	3	2	3	5	3	2	2	3	5	2	2
0362	2	4	4	2	2	2	3	1	3	3	4	3	1	2
0381	2	2	4	1	2	3	1	2	4	1	3	1	2	4
0412	3	2	5	5	5	3	5	2	3	5	3	5	2	1
0422	3	2	3	3	4	3	2	3	4	3	3	3	3	2
0432	3	2	3	5	5	5	5	2	4	5	4	5	5	2
0511	1	1	4	5	5	1	5	4	4	4	4	5	1	1
0522	3	2	2	5	5	3	5	1	4	2	3	5	5	2
0532	2	4	4	5	1	5	5	3	2	5	3	5	4	1
0541	3	2	4	5	5	2	5	3	4	3	3	5	1	2
0552	1	3	2	5	2	2	5	2	2	5	2	5	2	3
0562	3	3	2	3	5	3	5	2	2	5	3	5	2	2
0572	4	3	4	3	2	3	5	1	3	2	2	5	1	2
0581	3	2	2	5	5	5	4	1	2	5	5	1	3	4

RESPONSES OF MALES ON CLOTHING AND TEXTILES SUBTEST (CONTINUED)

	QUESTION NUMBERS												
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
0591	3	3	4	3	2	5	3	3	4	3	4	4	1	4
0602	1	2	3	3	2	5	5	2	3	3	3	5	2	2
0611	1	3	4	5	5	3	5	2	2	3	3	2	3	5
0622	3	1	3	2	3	2	4	4	4	3	4	3	2	3
0632	2	3	3	5	2	5	5	2	3	3	3	3	3	2
0642	2	3	5	5	5	2	5	3	3	3	4	5	5	1
0662	2	3	4	2	3	3	1	3	3	2	5	1	2	1
0702	2	3	5	5	5	5	5	3	3	5	1	5	5	2
0732	4	2	4	3	5	2	1	4	2	2	3	5	2	1
0761	3	2	4	5	5	3	3	2	5	1	3	2	1	4
0772	2	3	2	5	3	2	2	2	2	3	4	5	3	2
0782	3	3	4	2	3	1	3	2	4	3	4	5	1	1
0792	2	3	4	3	1	3	5	4	1	2	2	5	1	2
0201	3	4	4	3	2	3	3	3	3	3	4	5	3	2
0842	3	4	5	3	4	3	5	2	1	2	4	5	3	3
0922	3	2	3	2	5	3	5	2	5	5	2	5	2	3
1082	4	1	1	4	4	2	5	2	3	4	4	2	4	1
1142	2	5	3	5	1	2	2	2	3	1	1	2	1	3
1151	4	3	3	3	2	3	5	1	3	5	3	5	1	3
1182	2	2	3	5	5	5	5	2	3	5	1	3	2	3
1192	2	3	2	5	5	3	5	2	3	5	3	2	2	3
1202	2	3	2	5	2	3	5	2	1	2	2	5	4	2
1262	1	2	2	3	2	3	5	2	3	5	4	5	2	2
1281	2	1	1	4	4	3	5	1	4	1	4	5	1	1
1301	3	4	4	3	1	4	4	1	1	1	2	1	1	1
1321	1	3	3	5	3	5	5	5	5	5	5	5	2	3
1332	2	4	4	3	2	3	5	3	3	5	5	5	2	3
1342	2	3	4	3	2	3	3	2	2	2	2	5	2	3
1361	3	3	4	4	5	5	5	2	4	2	3	5	2	3
1371	3	2	3	3	2	4	3	3	3	1	3	1	2	2
1382	2	2	3	2	3	2	5	3	4	2	4	3	2	4
1452	3	2	5	5	2	3	5	2	2	2	3	5	2	3
1461	3	2	3	2	2	2	5	3	3	3	4	3	2	2
1492	2	2	3	3	5	2	5	3	3	1	4	5	2	2

RESPONSES OF MALES ON CLOTHING AND TEXTILES SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	1	5	7	11	15	18	19	22	24	29	30	31	32	35
1532	2	2	4	1	3	2	1	3	4	5	4	5	2	1
1542	2	5	4	5	5	5	5	5	5	5	4	5	1	4
1561	3	3	3	5	2	3	5	2	2	2	2	2	2	3
1571	2	3	3	3	3	5	5	1	2	2	2	3	2	3
1112	2	3	3	3	2	3	5	2	3	2	4	5	3	2

RESPONSES OF MALES ON FOOD SCIENCE SUBTEST

	QUESTION NUMBERS													
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
0011	2	4	5	3	2	4	1	5	2	2	3	3	4	3
0022	3	3	3	4	1	3	4	3	1	1	3	3	3	2
0031	4	3	4	4	1	3	2	3	1	1	4	4	4	2
0042	2	3	5	3	2	3	3	5	2	2	3	3	3	5
0052	2	5	3	3	5	2	4	5	2	1	3	2	2	2
0062	3	2	5	3	2	3	3	5	2	2	3	2	2	3
0082	4	2	3	4	2	4	3	5	1	1	4	3	3	3
0091	3	2	3	3	1	3	3	2	1	2	3	3	2	3
0102	5	1	5	5	5	5	5	5	5	5	5	5	5	5
0132	4	2	5	4	1	4	2	3	1	3	3	4	4	4
0171	3	2	4	3	2	3	3	2	2	2	3	3	3	2
0192	3	4	3	5	2	3	5	5	5	1	3	3	5	5
0232	2	4	5	3	2	2	3	5	2	1	4	2	3	5
0242	3	3	4	3	2	3	4	1	3	1	3	3	2	2
0282	3	4	5	4	2	3	5	5	2	2	3	2	5	5
0302	3	2	5	3	2	3	3	3	2	2	3	3	5	2
0312	3	4	4	3	2	3	4	5	2	1	3	1	2	5
0322	1	4	3	3	2	2	4	5	2	1	2	3	3	2
0332	3	4	5	3	2	5	5	3	5	5	5	5	5	5
0341	4	1	4	4	1	4	1	3	1	1	4	2	2	1
0352	5	3	3	2	2	3	3	2	4	1	3	2	3	5
0362	1	2	3	4	2	3	4	3	2	1	4	3	3	3
0381	3	3	4	4	1	4	4	2	1	1	4	3	4	3
0412	2	1	2	2	1	1	2	1	1	2	3	1	5	5
0422	3	3	3	3	2	3	3	3	2	2	2	3	3	3
0432	5	2	3	3	5	3	3	5	2	2	3	2	3	5
0511	3	4	4	4	2	1	4	4	1	1	2	3	3	1
0522	2	1	3	3	3	3	4	2	2	2	2	2	3	5
0532	3	4	3	4	1	4	3	5	1	1	4	2	3	5
0541	2	3	3	2	2	3	3	2	4	1	1	2	3	2
0552	5	1	4	4	1	4	4	2	2	2	5	3	3	3
0562	4	2	3	3	1	4	3	2	1	2	3	3	2	3
0572	3	2	4	3	2	3	3	3	1	1	3	3	3	2
0581	3	2	3	2	2	3	2	4	3	2	3	4	2	3

RESPONSES OF MALES ON FOOD SCIENCE SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
0591	4	1	3	3	2	4	4	3	5	1	4	3	5	2
0602	2	3	3	3	2	3	3	3	2	2	3	2	3	3
0611	3	2	3	4	2	3	1	5	2	2	2	4	5	3
0622	3	2	4	1	4	1	4	3	4	1	4	2	4	1
0632	5	2	5	3	2	3	4	5	2	2	2	2	3	3
0642	2	3	5	3	2	3	3	5	2	2	5	1	3	5
0662	3	2	5	3	2	2	5	2	2	2	3	2	3	5
0702	5	2	5	3	3	2	1	5	3	2	5	3	1	5
0732	2	4	4	4	2	3	4	2	2	2	3	1	4	5
0761	4	1	3	4	1	4	3	4	1	1	4	4	3	3
0772	3	3	4	3	2	3	4	2	2	3	2	2	4	2
0782	1	3	3	3	2	2	4	2	2	1	4	1	2	5
0792	2	3	4	4	2	3	2	1	1	1	4	2	4	2
0201	4	2	3	3	2	3	4	5	2	2	3	3	3	3
0842	3	4	5	3	2	3	4	5	2	5	5	2	3	3
0922	3	2	3	3	2	4	2	3	2	2	3	3	4	2
1082	2	5	1	1	4	1	4	2	4	4	1	1	2	3
1142	3	2	5	4	1	3	1	3	2	1	1	4	2	2
1151	4	3	4	4	1	3	3	5	1	2	3	3	3	2
1182	5	2	5	4	1	3	1	5	1	2	5	3	5	3
1192	5	2	4	3	2	3	4	3	2	2	3	3	5	3
1202	2	3	5	2	4	2	1	5	4	3	2	2	2	2
1262	3	2	4	4	2	4	4	5	4	1	4	4	3	2
1281	4	2	4	4	1	4	1	4	1	1	4	4	1	1
1301	4	1	4	4	1	4	2	2	1	1	4	4	3	2
1321	5	3	3	3	2	3	5	5	2	2	5	3	5	5
1332	3	2	3	4	2	4	4	5	2	1	4	3	5	2
1342	3	2	2	3	3	3	2	3	1	1	3	3	2	3
1361	2	2	3	3	2	3	3	3	2	2	3	4	3	2
1371	3	2	4	4	2	3	3	2	1	1	3	2	3	2
1382	3	3	3	3	2	3	3	3	2	2	4	2	2	3
1452	3	2	5	3	2	3	3	5	2	2	2	3	3	5
1461	5	4	3	4	2	2	4	2	2	1	3	1	4	3
1492	1	4	3	3	3	3	4	3	2	2	3	2	3	2

RESPONSES OF MALES ON FOOD SCIENCE SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	6	8	9	12	14	20	23	26	27	28	34	39	40	41
1532	2	3	2	3	5	3	4	1	3	2	3	2	3	5
1542	2	5	5	3	5	3	4	5	5	2	3	4	5	5
1561	3	2	3	3	2	3	2	3	2	2	3	5	5	5
1571	2	1	3	3	1	3	3	3	1	1	3	3	2	3
1112	2	3	5	3	2	3	4	3	2	2	2	3	4	3

RESPONSES OF MALES ON MODERN LIVING SUBTEST

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	42
0011	3	4	2	2	2	1	4	3	5	5	3	5	3	2
0022	1	3	5	4	3	2	5	3	3	3	3	3	2	1
0031	4	1	1	2	1	4	4	3	4	3	4	3	1	1
0042	3	3	1	3	3	2	3	5	5	3	2	5	3	2
0052	2	3	5	2	3	3	4	3	3	1	2	3	5	2
0062	3	2	3	5	3	2	2	5	5	3	3	5	2	3
0082	3	2	2	5	4	2	3	5	3	3	3	3	1	2
0091	2	2	1	5	4	3	5	3	5	5	5	3	5	5
0102	2	2	4	5	3	3	5	5	5	5	5	5	2	5
0132	2	5	5	5	3	5	3	5	4	3	5	5	4	2
0171	3	2	3	5	2	2	3	3	3	2	3	3	2	2
0192	3	5	5	5	2	1	3	5	5	2	5	5	2	2
0232	2	3	3	5	3	2	3	5	5	3	2	3	5	1
0242	3	3	4	1	2	1	3	3	3	3	3	3	3	1
0282	5	5	5	5	3	5	5	5	5	2	5	5	2	2
0302	2	2	2	2	4	3	3	5	5	2	5	5	2	5
0312	1	4	2	2	4	2	3	3	3	2	3	3	2	2
0322	3	3	2	2	4	1	2	3	3	3	2	3	2	2
0332	3	5	5	2	5	5	5	5	5	5	5	5	5	5
0341	5	1	3	2	3	2	4	3	3	3	3	3	3	1
0352	2	2	2	2	4	3	2	4	3	3	4	4	1	2
0362	3	2	2	2	3	3	4	2	1	3	3	4	2	1
0381	2	4	3	4	4	1	4	1	4	3	3	3	1	1
0412	2	2	5	5	3	3	2	3	5	4	2	2	2	2
0422	2	3	4	4	4	1	4	2	2	4	2	2	2	4
0432	2	5	2	5	5	3	3	3	5	3	5	5	2	2
0511	2	3	4	5	4	1	5	5	5	5	1	5	5	2
0522	1	2	3	5	1	4	1	3	5	2	2	5	1	5
0532	1	2	1	5	3	3	4	3	5	2	5	3	3	1
0541	2	2	4	5	3	2	3	2	5	3	2	5	2	1
0552	4	2	2	5	4	2	5	3	5	2	5	5	2	2
0562	2	2	2	3	3	2	3	3	3	2	3	3	3	2
0572	3	2	1	2	2	4	3	3	4	3	3	3	2	2
0581	4	2	2	2	5	3	5	3	5	2	1	2	3	2

RESPONSES OF MALES ON MODERN LIVING SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	40
0591	3	2	3	2	3	3	4	4	3	1	3	3	1	1
0602	3	2	1	2	2	2	3	3	5	2	3	3	2	2
0611	3	2	1	1	4	4	3	3	3	4	3	4	2	1
0622	2	3	1	3	2	3	3	2	3	1	2	3	1	3
0632	2	5	2	5	4	2	1	3	3	3	5	3	2	2
0642	2	2	2	5	3	2	5	3	5	2	2	5	2	5
0662	1	2	2	2	4	3	4	3	3	4	2	3	2	2
0702	3	2	2	5	1	4	5	2	5	3	5	5	2	5
0732	1	4	2	4	4	2	3	3	5	5	2	5	3	2
0761	2	3	3	2	3	2	3	4	3	2	3	4	4	1
0772	2	3	2	3	2	1	2	2	3	3	2	3	2	3
0782	1	3	2	4	4	3	4	2	3	4	1	3	4	1
0792	1	2	1	5	2	4	4	4	4	2	3	5	3	1
0201	3	2	2	2	4	2	3	3	3	3	5	3	2	2
0842	3	2	4	3	1	4	5	5	3	1	3	3	2	5
0922	2	3	2	5	4	3	3	2	3	2	3	3	1	1
1082	3	5	5	5	5	5	5	5	5	5	5	5	5	4
1142	3	2	1	1	3	3	3	3	3	5	3	4	1	1
1151	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1182	3	2	2	5	3	3	5	5	5	5	5	5	1	2
1192	3	2	2	2	2	4	3	5	5	5	5	3	2	2
1202	3	3	2	5	2	4	2	3	5	3	3	5	5	3
1262	3	5	5	5	5	5	5	5	5	3	5	5	5	5
1281	1	4	4	4	1	1	1	1	5	4	1	1	1	4
1301	2	3	2	5	4	5	2	5	5	3	2	5	1	5
1321	3	2	2	5	5	3	5	5	5	5	5	5	5	2
1332	4	4	1	5	4	4	3	4	4	3	3	3	2	2
1342	3	2	2	2	2	2	3	3	3	1	3	3	1	2
1361	4	2	5	2	3	3	3	3	3	2	3	3	2	2
1371	4	2	3	1	2	3	3	4	3	3	4	3	2	1
1382	3	3	3	4	2	3	3	4	4	1	1	1	1	2
1452	4	2	2	5	2	2	3	5	5	3	3	5	2	2
1461	1	3	5	5	3	1	5	3	3	2	2	3	3	2
1492	1	3	2	5	4	3	3	5	3	5	2	5	3	2

RESPONSES OF MALES ON MODERN LIVING SUBTEST (CONTINUED)

	QUESTION NUMBERS													
I.D.	2	3	4	10	13	16	17	21	25	33	36	37	38	40
1532	3	2	4	4	4	1	3	2	2	5	1	2	2	2
1542	4	5	5	5	3	5	3	5	5	5	5	5	5	4
1561	3	2	2	5	2	2	3	5	5	2	5	5	5	5
1571	3	2	1	5	1	1	3	2	5	1	3	2	1	1
1112	2	2	5	5	5	5	5	5	5	5	5	5	5	5